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Rev. 0

# Summary of the 300-FF-2 Operable Unit Data Quality Objective Process



Prepared for the U.S. Department of Energy  
Office of Environmental Restoration and  
Waste Management

**Bechtel Hanford, Inc.**  
Richland, Washington

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## ACRONYMS

BHI	Bechtel Hanford, Inc.
BPA	Bonneville Power Administration
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act</i>
COC	contaminants of concern
COPC	contaminants of potential concern
D&D	decontamination and decommissioning
DOE	U.S. Department of Energy
DOW	description of work
DQO	data quality objective
Ecology	Washington State Department of Ecology
EMI	electromagnetic induction
EPA	U.S. Environmental Protection Agency
ERC	Environmental Restoration Contractor
FFTF	Fast Flux Test Facility
GSSC	General Support Services Contractor
HEIS	Hanford Environmental Information System
IRM	Interim Remedial Measure
IROD	Interim Record of Decision
LFI	limited field investigation
MCL	maximum contaminant level
MTCA	<i>Model Toxics Control Act</i>
NPL	National Priorities List
PCB	polychlorinated biphenyl
PNNL	Pacific Northwest National Laboratory
QRA	Qualitative Risk Assessment
RCRA	<i>Resource Conservation and Recovery Act</i>
RL	Richland Operations Office
RLWS	radioactive liquid waste sewer
SCA	surface or soil contamination area
Supply System	Washington Public Power Supply System
TEDF	Treated Effluent Disposal Facility
TPH	total petroleum hydrocarbons
Tri-Party Agreement	<i>Hanford Federal Facility Agreement and Consent Order</i>
TSCA	<i>Toxics Substance Control Act</i>
UPR	unplanned release
URM	underground radioactive materials
UST	underground storage tank
WIDS	Waste Information Data System
XRF	x-ray fluorescence





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## 1.0 INTRODUCTION

The Data Quality Objective (DQO) process for the 300-FF-2 Operable Unit was initiated in March 1995 after directives from the U.S. Department of Energy (DOE) were received by Bechtel Hanford, Inc. (BHI) regarding implementation of the DQO process. The Draft A version of the *Remedial Investigation/Feasibility Study Work Plan for the 300-FF-2 Operable Unit* (DOE-RL 1994) had just completed the regulatory review cycle, and it was decided by the Richland Operations Office (RL) and the regulators that the DQO process should be conducted at that time in order to further focus the efforts of the work plan.

Representatives from the U.S. Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the DOE participated in DQO Process meetings that spanned from March 1995 through August 1995 to reach concurrence on joint decisions affecting the 300-FF-2 Operable Unit and to further refine the scope of the limited field investigation for this operable unit. Table 1-1 identifies the participants in the DQO process. The team consisted of the primary decision makers (DOE, EPA, and Ecology), technical contractors, and an independent party to act as the facilitator.

### 1.1 DEVELOPMENTS PRIOR TO INITIATING THE DQO PROCESS

After regulatory review of the work plan and prior to initiating the DQO process, the RL requested BHI to reevaluate the more than 200 potential waste sites that had been discussed in the *300-FF-2 Operable Unit Technical Baseline Report* (DeFord et al. 1994) and presented in the Draft A work plan. The results of this reprioritization effort were two tables that proposed to group waste sites into sites that should be included in the work plan scope (Table 1-2) and those that should not be included at this time (Table 1-3). A recommendation and rationale for each site was included in these tables.

Following the criteria established in the work plan, the sites proposed to be included in the work plan scope were grouped. The rationale for grouping of some sites included items such as common waste form, proximity of sites to each other, etc. From this a listing of 23 groups was derived. This listing, shown in Table 1-4, provided the basis by which the DQO process was conducted. Detailed descriptions of each of the waste sites identified in Table 1-4 can be found in DeFord et al. (1994).

Table 1-1. Participants in the 300-FF-2 DQO Process.

Decision Makers	Organization
David R. Einan	U.S. Environmental Protection Agency
Phillip R. Staats	Washington State Department of Ecology
Donna M. Wanek	U.S. Department of Energy
Robert G. McLeod	U.S. Department of Energy
Technical Support:	
Kathryn Kimmel	General Support Services Contractor (GSSC)
Michael J. Galgoul	Environmental Restoration Contractor
Larry C. Hulstrom	Environmental Restoration Contractor
Gregory D. Joyce	GSSC (facilitator)

Table 1-2. Sites Included in the Work Plan Scope. (2 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>HIGH PRIORITY (IRM PATHWAY)</b>		
<b>Process Effluent Facilities</b>		
316-3 (307 Trenches)	Proceed with IRM path to FFS, no QRA required; use 300-FF-1 remediation goals.	Sufficient information exists from the 300-FF-1 investigation to fulfill 300-FF-2 needs; VI
316-4 Crib (near the 618-10 Burial Ground)	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	Radioactive liquid waste disposal site; III
<b>Burial Grounds</b>		
618-2 Burial Ground	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II
618-3 Burial Ground	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II
618-7 Burial Ground	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II
618-13 Burial Ground	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II
<b>Unplanned Releases</b>		
Aluminum Recycle Staging Area/Burial Trench West of the Process Trenches	Investigate depth of contamination, reduce size of soil contamination areas via landlord action, and follow IRM path to FFS for remaining areas.	Slightly contaminated metal shavings are spread throughout a large area; II, V
<b>Other Facilities</b>		
600-23 (Pit)	Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II
JA Jones #1/600-1/UPR-600-11	Address all 3 sites together as part of the IRM. Proceed with IRM path to FFS. Evaluate additional data needs in the FFS at that time.	DOE, EPA, and Ecology team to review the approach to burial grounds; II, V, VI
<b>HIGH PRIORITY (LFI PATHWAY)</b>		
<b>Burial Grounds</b>		
618-10 Burial Ground (Phase 1)	Address as part of the LFI per the scope presented in the work plan.	Groundwater monitoring required to confirm burial ground stability; II
618-11 Burial Ground (Phase 1)	Address as part of the LFI per the scope presented in the work plan.	Groundwater monitoring required to confirm burial ground stability; II
Solid Waste Burial Ground (Early Burial Ground)	Address as part of the LFI per the scope presented in the work plan.	Uncertainty exists as to the type of disposed waste; II
Undocumented Waste Site, 400 Area Suspected Burial Ground	Address as part of the LFI per the scope presented in the work plan.	Inactive site, contains misc. construction debris; has appearance of possible burial ground; II

Table 1-2. Sites Included in the Work Plan Scope. (2 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>Unplanned Releases</b>		
UPR-300-1 (Near 340 Building)	Address as part of the LFI per the scope presented in the work plan.	Leak investigated, some soils were removed, status of well 399-3-8 is uncertain; V
<b>Other Facilities</b>		
600-47 (Debris N of 300 Area)	Investigate as part of the LFI per the scope presented in the work plan and then proceed with observational approach to remediation.	Inactive site, contains misc. construction debris, radioactive soils and debris; II
<b>LOW PRIORITY (LFI PATHWAY)</b>		
<b>Sanitary Sewerage System Facilities</b>		
Undocumented Waste Site, 400 Area Septic Tank or Cistern	Investigate and/or remediate during the LFI.	Possible inactive sanitary wastewater discharge; XI
<b>Other Facilities</b>		
600-22 (UFO Landing Site)	Address as part of the LFI per the scope presented in the work plan.	Possible herbicide contamination; X
600-46, (Cutup Oil Dump Site)	Characterize and/or remediate as a landlord activity and document the results in the LFI report as proposed in the work plan.	Contamination is limited, near the river, and easily addressed; X
<sup>a</sup> Selection rationale numbers defined in DOE-RL (1994). FFS = focused feasibility study IRM = interim remedial measure LFI = limited field investigation QRA = qualitative risk assessment		

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>SITES ASSOCIATED WITH THE 300 AREA COMPLEX</b>		
<b>RCRA Treatment, Storage, or Disposal (TSD) Units</b>		
300 Area Solvent Evaporator	To be addressed by RCRA and/or in conjunction with 300 Area decontamination and decommissioning (D&D) activities.	RCRA TSD Unit covered under the site-wide Part A permit; XIV
303-K Contaminated Waste Storage	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
304 Concretion Facility	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, IX
304 Storage Area	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, IX
305-B Storage Facility	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
311-TK-40	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX, XIII
311-TK-50	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX, XIII
313 Centrifuge	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
313 Filter Press	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
313-TK-2 Waste Acid Neutralization Tank	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
324 Sodium Removal Pilot Plant	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
325 Waste Treatment Facility	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
333 Chromium Tanks 1 and 2 (333-TK-7 and -11)	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX, XIII
334-A-TK-B & -C	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX, XIII
3718-F Alkali Metal Treatment Facility	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, IX
3718-F Burn Shed	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, IX
3718-F Treatment Tanks 1 & 2	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, XIII

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
Biological Treatment Test Facilities	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
Physical and Chemical Treatment Test Facilities	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
Thermal Treatment Test Facilities	To be addressed by RCRA and/or in conjunction with 300 Area D&D activities	RCRA TSD Unit covered under the site-wide Part A permit; VII, VIII, IX
<b>D&amp;D Activities</b>		
<b>Burial Grounds and Associated Unplanned Releases (UPRs)</b>		
618-1 Burial Ground <sup>b</sup>	Address in conjunction with 300 Area D&D activities	303-M Uranium Oxide Facility and several other structures are located adjacent or on top of the burial ground; II, VIII, IX
618-6 Burial Ground	Address in conjunction with 300 Area D&D activities	This burial ground was moved twice within the 300 Area before its eventual removal; VIII
618-8 Burial Ground <sup>b</sup>	Address in conjunction with 300 Area D&D activities	300 Area north parking lot is located over the majority of this site; II, VIII, IX
Undocumented Solid Waste Burial Ground <sup>b</sup>	Address in conjunction with 300 Area D&D activities	Located adjacent to and best addressed with the 618-8 Burial Ground; IX, XI
<b>Process Effluent Facilities</b>		
307 Retention Basins	Address in conjunction with 300 Area D&D activities	Active systems still supporting 300 Area facilities or functions; VII, VIII
300 Area Radioactive Liquid Waste Sewer (RLWS) and 340 Building Complex	Address in conjunction with 300 Area D&D activities	Active systems still supporting 300 Area facilities or functions; VII, VIII
Process Sewer System	Address in conjunction with 300 Area D&D activities	Active systems still supporting 300 Area facilities or functions; VIII
300 Area Retired RLWS	Address in conjunction with 300 Area D&D activities	Underlies active systems still supporting 300 Area facilities or functions; XIII
<b>Sanitary Sewerage System Facilities</b>		
300 Area Sanitary Sewer System	Address in conjunction with 300 Area D&D activities	Active systems still supporting 300 Area facilities or functions; VIII, IX, XIV
300 Area French Drains (approx. 140)	Address in conjunction with 300 Area D&D activities	Active systems still supporting 300 Area facilities or functions; XI
315 Retired Sanitary Drain Field	Address in conjunction with 300 Area D&D activities, if required	Inactive septic tank and drain field located adjacent to 315 Water Filter Plant; XI
331 LSL Drain Field	Address in conjunction with 300 Area D&D activities, if required	Inactive drain field located east of 331 Buildings



Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
331 LSL Trenches 1	Address in conjunction with 300 Area D&D activities, if required	Inactive trench partially removed during construction of 331 Building; XI
331 LSL Trenches 2	Address in conjunction with 300 Area D&D activities, if required	Inactive trench located near the 331 Building; XI
335 and 336 Retired Sanitary Drain Fields	Address in conjunction with 300 Area D&D activities, if required	Inactive septic tank and drain field located under the 335 Building parking lot; XI
Undocumented Waste Site, 350 Building Sanitary Sewer Lift Station	No CERCLA action required	1993 occurrence report concerning latex paint release to the sanitary sewer; XI
<b>Unplanned Releases</b>		
UPR-300-2 (1954 spill at the 340 Building)	Address in conjunction with 300 Area D&D activities	Spill to soil in vicinity of building; X
UPR-300-4 (Beneath and South of 321 Building)	Address in conjunction with 300 Area D&D activities	Extensive uranyl nitrate found around and under the building; V, VIII, IX
UPR-300-5 (1973 spill at the 309 Building)	Address in conjunction with 300 Area D&D activities	Spill to soil in vicinity of building; IX, XII
UPR-300-7 (1972 fuel oil spill at the 384 Building)	Address in conjunction with 300 Area D&D activities	Spill to soils near building and storage tanks; VII, X
UPR-300-10 (1977 RLWS release under the 325 Building)	Address in conjunction with 300 Area D&D activities	Leak in RLWS lines beneath the 325 Building; VIII
UPR-300-11 (1977 RLWS release near the 340 Building)	Address in conjunction with 300 Area D&D activities	Leak in RLWS lines near the 340 Building; XII
UPR-300-12 (1977 spill in basement of 325 Building)	Address in conjunction with 300 Area D&D activities	Spill to floor with seepage to soils under the building; VIII
UPR-300-13 (1973 leak from tank under 334A Building)	Address in conjunction with 300 Area D&D activities	Original tank removed, site now under 334A Building; VIII, IX
UPR-300-14 (1975 leak at the 334 Tank Farm)	Address in conjunction with 300 Area D&D activities associated with the 618-1 burial ground	Acid went to neutralization pit in 618-1 Burial Ground; X
UPR-300-17 (1979 U fines fire at 333 Building)	Address in conjunction with 300 Area D&D activities	Contaminated area adjacent to 333 Building; X
UPR-300-18 (1962 minor release at 321 Tank Farm)	No CERCLA action required	Release limited to employee clothing; X
UPR-300-38 (early 1970's leak under 333 Building)	Address in conjunction with 300 Area D&D activities	Leak was under the floor in the building; VIII
UPR-300-39 (1954 release at 311 Tank Farm)	Address in conjunction with 300 Area D&D activities	Contamination in soils around the tanks; X
UPR-300-40 (pipe trench between 311 Tank Farm and 303-F Building)	Address in conjunction with 300 Area D&D activities	Acids with uranium in solution leaked to soils surrounding the pipe trench; VIII, X
UPR-300-41 (1986 release 15 ft west of 340 Building)	Address in conjunction with 300 Area D&D activities if required	Remediation performed at the time of the release; X
UPR-300-42 (1983 release at the Powerhouse)	No CERCLA action required	Fuel oil spill was confined, soaked up, and removed; XII

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
UPR-300-43 (1986 release of solvent refined coal at 329 Building)	No CERCLA action required	Discolored soils were removed; XII
UPR-300-44 (1985 discovery of 313 Building Process Sewer leak)	Address in conjunction with 300 Area D&D activities	Sewer line section is under the building; VII, VIII, IX
UPR-300-45 (1985 release beneath transfer piping east of 303-F Building)	Address in conjunction with 300 Area D&D activities	Soil removal was completed; X, XII
UPR-300-46 (1989 discovery north of 333 Building)	Address in conjunction with 300 Area D&D activities	Some soil removal was completed; X, XII
UPR-300-47, 309 Building Glycol Spill (1993)	No CERCLA action required	Discharge went to the process sewer and 316-5 process trenches; VII
UPR-300-48 (1991 discovery under 325 Building)	Address in conjunction with 300 Area D&D activities	Process sewer leak under the building, sealed with grout in 1993; VIII, IX, XII
Corrosion of Vitrified Clay Sewer Piping (1989 discovery)	Address in conjunction with 300 Area D&D activities of the Process Sewer system	Process sewer line near 3712 Building was found corroded away; VIII
384 Powerhouse #6 Fuel Oil Spill (1991 spill)	No CERCLA action required	Spill cleanup performed; XII
<b>Other Facilities</b>		
Other Potential Waste Sources	Address on a case by case basis	For other unknown occurrences; VII, VIII, IX
300 Area Powerhouse HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Storage area still active; VII, IX, XI
300 Area Interim Filter Backwash Disposal (Area West of 300 Area)	No CERCLA action required	Nonhazardous backwash disposal area; XI
300-1 (Auto Maint. Yard)	No CERCLA action required at the request of Native Americans	Minor oil spill in an area of cultural sensitivity; XI
300-2	Address in conjunction with 300 Area D&D activities	Release of contaminated light water from 309 Building to current site of 3763 Building; VIII, IX, X
303-M Uranium Oxide Facility	Address in conjunction with 300 Area D&D or 618-1 Burial Ground remediation activities	Building placed in final standby status in 1987; now awaiting D&D; VII, IX
303-M Storage Area	Address in conjunction with 300 Area D&D or 618-1 Burial Ground remediation activities	No record or evidence of releases; VII, IX
Undocumented Waste Site, Solid Waste Site Near 303-G Building	Address in conjunction with 300 Area D&D activities	Subsurface contamination along Ginko St. is related to building operations; IX
Undocumented Waste Site, 306-E, 306-W	Address in conjunction with 300 Area D&D activities	Contamination located in building and surrounding soils; VIII, IX
309-TW-1, -2, -3	Address in conjunction with 300 Area D&D activities	Tanks are enclosed in an underground concrete vault; VII, XIII

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
309-WS-1 (IX Vault)	Address in conjunction with 300 Area D&D activities	Building landlord is in process of facility transition to D&D at this time; VII
309-WS-2 (IX Pit)	Address in conjunction with 300 Area D&D activities	Building landlord is in process of facility transition to D&D at this time; VII
309-WS-3 (309 Brine Pit)	Address in conjunction with 300 Area D&D activities	Backfilled with sand and gravel; XI, XII, XIV
311 Methanol Tanks 1 and 2	No CERCLA action required	Tanks removed in 1989, no evidence of contamination; XII
313 Copper Remelt Operations	Address in conjunction with 300 Area D&D activities	Part of 313 and 305 Building operations; VII, VIII, IX
313 East Side Storage Pad	Address in conjunction with 300 Area D&D activities	Active storage area; VII, IX
313 Methanol Tank	No CERCLA action required	Tank removed in 1989, no evidence of contamination; XII
313 Uranium Recovery Operations	Address in conjunction with 300 Area D&D activities	Part of 313 Building operations; VII, VIII, IX
323 Tanks 1, 2, 3, and 4	Address in conjunction with 300 Area D&D activities	Tanks enclosed in concrete vault under the 323 Building; VII, VIII, IX
331-C HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Active storage area near 331 Building; VII, IX
333 East Side Heat Treat Salt Storage Area	Address in conjunction with 300 Area D&D activities	Inactive storage area near 333 Building and over 618-1 Burial Ground; VII, IX
333 East Side HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Active storage area near 333 Building and over 618-1 Burial Ground; VII, IX, XIV
333 Laydown HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Inactive storage area near 333 Building and over 618-1 Burial Ground; VII, IX
333 West Side Waste Oil Tank	Address in conjunction with 300 Area D&D activities	Active, nonhazardous, nonrad storage tank; VII
334 Tank Farm Waste Acid Storage Tank	Address in conjunction with 300 Area D&D activities	Tank removed from service in 1986; VII
340 Complex HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Active storage near 340 Building; VII, IX
350 HWSA	Address by Building landlord and/or in conjunction with 300 Area D&D activities	Active storage area near 350 Building; VII, IX
3712 Uranium Scrap Storage Area	Address in conjunction with 300 Area D&D activities	Active U storage area; VII, VIII, IX
3713 Paint Shop Haz. Waste Satellite Area	Address in conjunction with 300 Area D&D activities	Miscellaneous wastes related to paint shop; VII, IX

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale*
3713 Sign Shop Haz. Waste Satellite Area	Address in conjunction with 300 Area D&D activities	Miscellaneous wastes related to paint shop; VII, IX
3746-D Silver Recovery	Address in conjunction with 300 Area D&D activities	Active silver recovery operation from photochemical wastes; VII, VIII, IX
300 Area ISV Site	Address in conjunction with 300 area D&D activities	Currently ongoing operations; XII
DOE 351 Substation (300-4)	Address in conjunction with 300 Area D&D activities	Surface and subsurface contamination found at this "active" power station; XII, XIV
Undocumented Waste Site, Hanford Grout Lysimeter Facility	Address in conjunction with D&D activities at this location	D&D is currently being planned; X, XIV
Undocumented Waste Site, 366 and 366A Fuel Oil Bunkers	Address in conjunction with 300 Area D&D activities	Two tanks enclosed in an underground concrete bunker; VII, VIII, IX
Undocumented Waste Site, 3705 Photography Building	Address in conjunction with 300 Area D&D activities	Recently active as photo processing shop; VII, VIII, IX
Undocumented Waste Site, 3730 Gamma Neutron Irradiation Facility	Address in conjunction with 300 Area D&D activities	Large cobalt-60 source currently used for gamma irradiation testing; VII, VIII, IX
Undocumented Waste Site, 325 Lab Diesel Fuel Tank	No CERCLA action required	Tank removed in 1992, no contamination found; XII
Undocumented Waste Site, 329 BioPhysics Laboratory	Address in conjunction with 300 Area D&D activities	Small soil contamination area found outside building in 1991; VII, VIII, IX
Undocumented Waste Site, 314 Metal Extrusion Building	Address in conjunction with 300 Area D&D activities	Soil contamination near building related to fuel fabrication operations in 313 Building; VII, VIII, IX
Undocumented Waste Site, Solid Waste Site Near 314 Building	Address in conjunction with 300 Area D&D activities	"Yellow cake" found on subsurface portion of power pole near building; VII, IX
Undocumented Waste Site, 324 Building	Address in conjunction with 300 Area D&D activities	Possible radiological contamination in soils beneath building reported; VII, VIII, IX
Undocumented Waste Site, 331 Building Animal Waste Tanks and Trench	Address in conjunction with 300 Area D&D activities	Associated with 331 Building operations; XIV
Undocumented Waste Site, 333 Building	Address in conjunction with 300 Area D&D activities	Other UPRs, associated buildings, and building operational history indicates subsurface contamination exists VII, VIII, IX
<b>Underground Storage Tank (UST) Program</b>		
Undocumented Waste Site, 382 Pump House Underground Storage Tank	No CERCLA activity required; UST program to remediate 382-1 site	382-1 tank extracted, contamination found; 382-2 and 382-3 tanks removed with no contamination found; VIII, XII
Undocumented Waste Site, 3709-A Fire Station	Investigative/remedial activities will coincide with the destruction of the fire station. Interim monitoring will remain an activity for the UST Program.	Tanks removed, soil contamination found; VIII, IX, XII

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>SITES ASSOCIATED WITH THE 400 AREA COMPLEX</b>		
<b>RCRA TSD Units</b>		
437 Area Maintenance and Storage facility	To be addressed by RCRA and/or in conjunction with 400 Area D&D activities	Currently used for other Site projects, will be used during FFTF D&D; VII, IX
4843 FFTF Sodium Storage (Alkali Metal Storage)	To be addressed by RCRA and/or in conjunction with 400 Area D&D activities	Currently still active; VII, VIII, IX
<b>D&amp;D Activities</b>		
<b>Process Effluent Facilities</b>		
400 Area Process Pond and Sewer System	Address in conjunction with 400 Area D&D activities	Currently active; XI
400 Area Sand Bottom Trench	Address in conjunction with 400 Area D&D activities	Currently active; XI
<b>Unplanned Releases</b>		
UPR-400-1 (1984 spill north of 427 Building)	Address in conjunction with 400 Area D&D activities, if required	Adjacent to the 427 Building cooling towers; X
<b>Other Facilities</b>		
Other Potential Waste Sources	Address on a case-by-case basis	For other unknown occurrences, VII, VIII, IX
400-1 (dump area)	No CERCLA action required; Address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI
427 HWSA	Address by Building landlord and/or in conjunction with 400 Area D&D activities	Currently still active; VII, VIII, IX
440 Hazardous Waste Storage Facility	Address by Building landlord and/or in conjunction with 400 Area D&D activities	Currently still active; VII, VIII, IX
4713-B HWSA	Address by Building landlord and/or in conjunction with 400 Area D&D activities	Currently still active; VII, VIII, IX
4722 Paint Shop HWSA	Address by Building Landlord and/or in conjunction with 400 Area D&D activities	Currently still active; VII, VIII, IX
4831 Laydown HWSA	Address by Building Landlord and/or in conjunction with 400 Area D&D activities	Associated with the 4831 Building; VII, IX
4831 Flammable Storage Facility	Address by Building Landlord and/or in conjunction with 400 Area D&D activities	Currently still active; VII, IX
Buried Construction Waste Area Number 1	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; under the 4843 Laydown area and 4843 Building; IX, XI, XIV
Buried Construction Waste Area Number 2	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains misc. construction debris; under the 4831 Flammable Storage Facility; IX, XI, XIV

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
Undocumented Waste Site, 400 Area Concrete Batch Plant	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI
Undocumented Waste Site, 400 Area Material Dumping and Building Foundation	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI
Undocumented Waste Site, 400 Area Construction Material Dumping Area	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI
Undocumented Waste Site, 400 Area Burn Pit	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI, XIV
Undocumented Waste Site, 400 Area Waste Dumping Site	No CERCLA action required; address during 400 Area D&D activities as landlord activity	Inactive solid waste site, contains miscellaneous construction debris; XI, XIV
<b>Sanitary Sewerage System Facilities</b>		
400 Area Retired French Drains	Address in conjunction with 400 Area D&D activities, if required	Part of the FFTF complex; XI
400 Area Retired Sanitary Pond	Address in conjunction with 400 Area D&D activities, if required	Miscellaneous sanitary wastewater discharge to ground, retired and backfilled in 1979; XI
400 Area Retired Septic Tanks	Address in conjunction with 400 Area D&D activities, if required	Part of the FFTF complex, tanks located near 4702 Building; XI
400 Area French Drains 1A, 1B, 2, 3, 4, 5, 6, 7, 8, 9, 10, and 10A	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
403 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
4607 Sanitary Sewer	Address in conjunction with 400 Area D&D activities	Active system still supporting FFTF complex; VIII, XI
4607 Sanitary Tile Field	Address in conjunction with 400 Area D&D activities, if required	Replaced by 4607 Sanitary Sewer Lagoon but still part of the FFTF complex; XI
4713-B French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, 4713-B Loading Dock French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
4721 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
4722-B French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
4722-C French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
Undocumented Waste Site, Retired Portable Sanitary Sewage Treatment Plant	No CERCLA action required	Temporary facility; pipelines were abandoned in place; location was within the FFTF complex; XI, XII
Undocumented Waste Site, 4607 Sanitary Sewer Lagoon	Address in conjunction with 400 Area D&D activities	Active system still supporting FFTF complex; XI
Undocumented Waste Site, Underground Sewer Line from FFTF to Supply System	Address in conjunction with 400 Area D&D activities	Tie-line never used; still part of the FFTF complex; XI, XIV
Undocumented Waste Site, 4608 Sanitary Sewer	Address in conjunction with 400 Area D&D activities	Active system still supporting FFTF complex; XI
Undocumented Waste Site, 4608 Sanitary Tile Drain Field	Address in conjunction with 400 Area D&D activities	Active system still supporting FFTF complex; XI
Undocumented 400 Area Storm Drain Outfall Trench	Address in conjunction with 400 Area D&D activities	Active stormwater drainage outfall; XI
Undocumented Waste Site, 451-A Substation and B/N Plant French Drain	Address in conjunction with 400 Area D&D activities	Part of the FFTF complex; XI
Undocumented Waste Site, Altitude Valve Pit T-58 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, Altitude Valve Pit T-87 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, Altitude Valve Pit T-330 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, Well Pump P-14 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, Well Pump P-15 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, Well Pump P-16 French Drain	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
Undocumented Waste Site, 400 Area French Drain 11	Address in conjunction with 400 Area D&D activities	WAC-173-216/218 permit application is in process; active site; XI
<b>Underground Storage Tank Program</b>		
Diesel Fuel Tank Fitting Leak	No CERCLA action required. Addressed through UST program	Tanks removed, remediation completed; XII
<b>OTHER SITES ASSOCIATED WITH THE 300-FF-2 OPERABLE UNIT</b>		
<b>Burial Grounds and Associated UPRs</b>		
618-9 Burial Ground	No further CERCLA action required other than to note that remediation has already been completed	Remediation completed via the Expedited Response Action performed at this site; XII

Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
618-10 Burial Ground (Phase 2)	No action required at this time (other than groundwater monitoring)	Transuranic (TRU) waste handling and disposal facilities are presently unavailable; XV
618-11 Burial Ground (Phase 2)	No action required at this time (other than groundwater monitoring)	TRU waste handling and disposal facilities are presently unavailable; XV
UPR-600-1 (618-10)	To be addressed when the 618-10 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-2 (618-10)	To be addressed when the 618-10 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-3 (618-10)	To be addressed when the 618-10 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-4 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-5 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-6 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-7 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-8 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-9 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-10 (618-11)	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
UPR-600-22 - 600-21 - (WPPSS Windrow Site) <sup>b</sup>	To be addressed when the 618-11 Burial Ground is addressed	Occurred within or near the burial ground during operation; XV
<b>Other Facilities</b>		
Benton Switch Substation	Address in conjunction with Site D&D activities	Site currently active; XIV
H.J. Ashe Substation Switchyard	Address in conjunction with Site D&D activities	Site currently active; XIV
H.J. Ashe Substation Storage Area, BPA SWMU #12	Address in conjunction with Site D&D activities	Site currently active; XIV



Table 1-3. Sites Not Included in the Work Plan Scope. (11 sheets)

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
H.J. Ashe Substation Oil/Water Separator and Dry Well, BPA SWMU #13 <sup>b</sup>	Address in conjunction with Site D&D activities	Site currently active; XIV
<p><sup>a</sup>Selection rationale numbers found in DOE-RL (1994).</p> <p><sup>b</sup>Sites where nonintrusive activities such as surface radiation surveys, surface geophysics, and ecological investigations were conducted under Draft A of the work plan prior to completion of the DQO process.</p> <p>BPA = Bonneville Power Administration</p> <p>CERCLA = <i>Comprehensive Environmental Response, Compensation, and Liability Act</i></p> <p>DOE = U.S. Department of Energy</p> <p>FFTF = Fast Flux Test Facility</p> <p>HWSA =</p> <p>RCRA = <i>Resource Conservation and Recovery Act</i></p> <p>SWMU =</p>		

Table 1-4. Initial 300-FF-2 DQO Waste Site Groupings.

Group	Waste Site Description
1	Ashe Substation Oil/Water Separator and Dry Well
2	307 Retention Basins and 307 Trenches
3	618-10/618-11 Burial Grounds and Associated UPRs
4	618-1, -2, -3, - 8 Burial Grounds, UPR-300-14, 303-M Uranium Oxide Facility, 303-M Storage Area
5	618-7 Burial Ground
6	UPR-600-22 (Windrow Site)
7	618-13 Burial Ground
8	Burial Ground West of the Process Trenches, Undocumented Solid Waste Burial Ground (near 618-8), Solid Waste Burial Ground (Early Burial Ground)
9	316-4 Crib
10	UPR-300-1 (340 Complex)
11	Aluminum Recycle Staging Area
12	600-22 (UFO Site)
13	618-6 Burial Ground, 300 Area RLWS and 340 Building Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System
14	Cutup Oil Dump Site
15	618-9 Burial Ground
16	600-1, JA Jones #1, UPR-600-11
17	600-47 (Debris north of 300 Area)
18	600-23 (Pit near Wye Barricade)
19	400-1 (Dump area near 400 area)
20	400 Area Retired Sanitary Pond
21	Undocumented Waste Site, 400 Area Septic Tank/Cistern
22	400 Area Undocumented Sites including 400 Area Concrete Batch Plant, 400 Area Material Dumping and Building Foundation, 400 Area Construction Material Dumping Area, 400 Area Burn Pit, 400 Area Waste Dumping Area
23	400 Area Suspected Burial Ground

## 2.0 DESCRIPTION OF THE DQO PROCESS

The DQO process provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision errors for the study, and how many samples to collect. The use of the DQO process ensures that the type, quantity, and quality of environmental data used in decision making will be appropriate for the intended application. The seven steps of the DQO process as defined by the EPA (1994) are the following:

1. State the problem
2. Identify the decision
3. Identify the inputs to the decision
4. Define the study boundaries
5. Develop the decision rule
6. Specify tolerable limits on decision errors
7. Optimize the design for obtaining data.

The first five steps of the DQO process identify mostly qualitative criteria such as what problem has initiated the study and what decision it attempts to resolve. These steps also define the type of data that will be collected, where and when the data will be collected, and a decision rule that defines how the decision will be made. The sixth step defines quantitative criteria expressed as limits on decision errors that the decision maker can tolerate. The final step is used to develop a data collection design based on the criteria developed in the first six steps. The final product of the DQO process is a data collection design that meets the quantitative and qualitative needs of the project.

The decisions identified in this report were not always reached by using the strict EPA DQO process seven-step approach. The decision makers used the format to the extent necessary to reach decisions that were justifiable. Decisions made outside this process are identified within this document. Steps six and seven were not formally utilized for any of the waste site groupings. Decisions were made, however, on sampling strategies for a number of waste sites. The decision makers achieved the most important precept of the DQO process by concurring on the decision rules for the waste sites that were discussed and the appropriate level of quantity and quality of data that was necessary to make those decisions.

The DQO process for the 300-FF-2 Operable Unit included the following activities:

- Identification of Participants - The DQO participants were selected to represent primary decision makers (EPA, DOE, and Ecology), technical support contractors, and an independent party to act as a facilitator. Table 1 identifies the participants. The participants were selected based on their relationship to the decision-making process for the 300-FF-2 Operable Unit as well as their value as technical contributors to the activities associated with the operable unit.
- Facilitator Interviews - The DQO facilitator conducted interviews to receive preliminary input on the DQO process from each participant on an individual basis prior to the first meetings. Input included major concerns related to the DQO process, potential data needs, and perceived end products of the DQO process.

- **Data Compilation** - Prior to the initial DQO meetings and during subsequent discussions, the existing data related to the 300-FF-2 Operable Unit waste sites were compiled and evaluated to identify potential data gaps. The existing data were reviewed by the DQO participants to allow decision makers to become familiar with the existing database. The primary data sources were the *300-FF-2 Operable Unit Technical Baseline Report* (DeFord et al., 1994) and the Hanford Environmental Information System (HEIS) database. Substantial data collection has been ongoing for many years through a number of monitoring programs, and therefore a large amount of data were available. Not all waste sites, however, have pertinent data available.
- **DQO Meetings** - A series of meetings were held between March and August 1995 to complete the DQO process. Initial meetings consisted of reviewing and discussing existing data to identify any potential data gaps. Additional data gathering and evaluation was performed as needed in support of the meetings. The data were evaluated considering spatial and temporal distribution of data collection activities, including identification of analytes and locations of monitoring wells.

As the decision makers identified additional data needs, the technical contributors provided the requested information in a timely manner to facilitate efficient decision making. Meeting minutes/agreements found in Appendix A document the discussions held during the DQO process as well as the key decisions reached by the participants. The additional materials that were provided during the meetings can be found in the 300-FF-2 project files as part of the record of the DQO process.

Appendix B contains a compiled summary of the DQO meetings that was the precursor to this summary document. It has been retained as part of this report to facilitate future regeneration of the thought process and decision making that occurred during the DQO meetings.

- **Informed Decisions** - As a result of the comprehensive review and evaluation of existing data by all participants, the necessary decision-making tools were made available to define the limited field investigation (LFI) activities for the 300-FF-2 Operable Unit. The DQO process provided the decision makers with the information necessary to make informed decisions that ultimately resulted in savings to both schedule and budget.

### 3.0 RESULTS OF THE DQO PROCESS

During the course of the meetings, the following agreements were made concerning the 300-FF-2 Operable Unit. Numerous discussions were held, and a range of options for each waste site group were discussed during the course of the meetings. This report presents the conclusions of those discussions.

#### 3.1 LAND-USE SCENARIO DEFINITION

Initial discussions with DOE and the regulatory agencies regarding the waste site groupings to be discussed defined in general terms the land-use assumptions associated with the waste sites. These land-use assumptions were recognized to be only assumptions upon which the framework from which decisions relative to potential remediation goals could be made. Final land-use definitions were considered beyond the scope of the DQO discussions.

Based on the land-use assumptions presented in Table 3-1, risk scenarios were developed to define the contaminant pathways and conceptual models for each waste site grouping. These scenarios included specific definitions for residential/unrestricted use, industrial, and recreational usage of the sites. The following represents the specific criteria for each defined scenario:

##### Residential Scenario:

- Protection from further contamination of groundwater
- Soil ingestion
- Dermal contact with soil
- External exposure to soil
- Inhalation
- Ingestion of game, fish, and crops
- 30-year duration
- 365 days/year
- 24 hours/day.

**NOTE:** It was agreed that unrestricted is equivalent to residential and to specify that residential is used to represent unrestricted use.

##### Industrial Scenario:

- Protection from further contamination of groundwater
- Soil ingestion
- Dermal contact with soil
- External exposure to soil
- Inhalation
- 30-year duration
- 250 days/year
- 8 hours/day
- External exposure at 1500 hours inside and 500 hours outside per year.

### Recreational Scenario:

- Protection from further contamination of groundwater
- Soil ingestion
- Dermal contact with soil
- External exposure to soil
- Inhalation
- Ingestion of game and fish
- 30-year duration
- 7 days/year\*
- 24 hours/day.

\* The exposure duration parameters were unresolved. (However, it was later determined that the recreational scenario would not be applied, and therefore further resolution was unnecessary.)

## **3.2 GLOBAL DECISIONS**

The following general decisions were made in each area as noted. As discussions continued and the agreements listed below were documented, a number of alterations to the original grouping of sites occurred. Table 1-4 was altered to more accurately reflect the decisions that had been reached. Table 3-2 presents the final grouping of waste sites that were discussed during the DQO process. This included the addition of one waste site group, making a total of 24 waste site groups.

### **3.2.1 General Decisions**

- A baseline risk assessment will not be required because excavation of material from the sites will be conducted using risk-based action levels.
- The decision makers agreed that decision rules will be defined to the extent possible during the DQO process for sites that will be deferred until decontamination and decommissioning (D&D) activities.
- The decision makers agreed that the DQO summary report will capture the decisions made and their rationale so that in the future those decisions can be more easily understood.
- All DQO agreements shall be addressed in the work plan.
- French drains (i.e., Class V underground injection wells) in the 300 and 400 Areas that are both inactive and noncontaminated can be removed from Appendix C of the *Hanford Federal Facility Agreement and Consent Order* (Tri-Party Agreement) (Ecology et al. 1994) and managed during the D&D process for the associated building. French drains that are contaminated cannot be decoupled from the 300-FF-2 Operable Unit; however, remediation of these wells can also be deferred to such time as D&D activities are initiated. Active french drains are deferred until such time as they become inactive.

- It was agreed that further investigation of the In-Situ Vitrification (ISV) site would be required for this work plan. The action was taken by RL to establish meetings with appropriate personnel to facilitate transition of this site from *Resource Conservation and Recovery Act* (RCRA) to *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) programs.
- 300 Area Proper - Fire Station Underground Storage Tank (UST): Background information was provided on this UST removal. Ecology noted that the data in the closeout report are inadequate for closure. Ecology requested that the CERCLA operable unit decision makers close out the waste site. Decision makers agreed to accept this site, with the stipulation that interim monitoring will remain an activity for the UST program and that investigative and/or remedial activities will coincide with destruction of the fire station. It was agreed that no decision rule will be developed at this time.

### 3.2.2 Burial Grounds

- The observational approach will be used to excavate and remove burial grounds.
- Burial Ground Remedial Action Strategy: The Tri-Parties are currently discussing a site-wide burial ground strategy, including revisiting the assumption that all burial grounds in the 100 and 300 Areas will be excavated. The results of these discussions could impact 300-FF-2. The current approach is limited characterization followed by excavation using the observational approach. The Tri-Parties agreed to retain the current approach for 300-FF-2 burial grounds. It was understood that a strategy to avoid reissuance of the work plan may be necessary should the approach change.
- Sample design will be decided during the observational approach decisions made at the remedial design stage. At that time the DQO Team may need to reconvene to agree on steps 6 and 7 of the DQO process.

### 3.2.3 Contaminants of Concern

- A contaminants of potential concern (COPC) list will be compiled from historical information and waste acceptance criteria as a product of this DQO. The contaminants of concern (COC) list will be refined from the COPC list during the excavation.
- Contaminants of concern and their cleanup levels will be provided in the work plan.
- Contaminants of concern will be defined in the DQO document, as opposed to documenting them only in the description of work (DOW). The concern with using the DOW for that type of information is that knowledge could be lost by not documenting the contaminants of concern in the work plan or remedial investigation report. The COPC list developed as part of the DQO discussions is shown in Table 3-3.

#### **3.2.4 Groundwater Protection**

- The groundwater protection issue will be decided by negotiations in the 100 Area and adopted by the 300-FF-2 Operable Unit. Although acceptance of proposed calculations by the 100 Area Management has not yet been agreed to by regulatory decision makers, an interim record of decision (IROD) will define the groundwater protection criteria.

This item will be addressed in the 100 Area Remedial Action work plan.



Table 3-1. Land-Use Assumptions for 300-FF-2 Operable Unit Sites  
Included in the Work Plan Scope.

300-FF-2 Operable Unit Waste Site	Land-Use Assumption
<b>Process Effluent Facilities</b>	
316-3 (307 Trenches)	Industrial
316-4 Crib (near the 618-10 Burial Ground)	Industrial
<b>Burial Grounds and Associated UPRs</b>	
618-2 Burial Ground	Industrial
618-3 Burial Ground	Industrial
618-7 Burial Ground	Industrial
618-10 Burial Ground	Industrial
618-11 Burial Ground	Industrial
618-13 Burial Ground	Industrial
Solid Waste Burial Ground (Early Burial Ground)	Industrial
Undocumented Waste Site, 400 Area Suspected Burial Ground	Industrial
<b>Sanitary Sewerage System Facilities</b>	
Undocumented Waste Site, 400 Area Septic Tank or Cistern	Industrial
<b>Unplanned Releases</b>	
UPR-300-1 (Near 340 Building)	Industrial
<b>Other Facilities</b>	
Burial Trench West of the Process Trenches	Industrial
Aluminum Recycle Staging Area	Industrial
JA Jones #1/600-1/UPR-600-11	Residential <sup>a</sup>
600-22 (UFO Landing Site)	Residential <sup>a</sup>
600-23 (Pit)	Residential <sup>a</sup>
600-46 (Cutup Oil Dump Site)	Residential <sup>a</sup>
600-47 (Debris N of 300 Area)	Industrial
<sup>a</sup> For risk assessment purposes, the residential land-use scenario is considered equivalent to unrestricted use of the site.	

Table 3-2. Revised 300-FF-2 DQO Waste Site Groupings.

Group	Waste Site Description
1	Ashe Substation Oil/Water Separator and Dry Well
2	307 Trenches
3	618-10/618-11 Burial Grounds and Associated Unplanned Releases
4	618-1,-2,-3 Burial Grounds, UPR-300-14, 303-M Uranium Oxide Facility, 303-M Storage Area
5	618-7 Burial Ground
6	UPR-600-22 (Windrow Site)
7	618-13 Burial Ground
8	Undocumented Solid Waste Burial Ground (near 618-8), Solid Waste Burial Ground (Early Burial Ground), <b>618-8 Burial Ground</b>
9	316-4 Crib
10	UPR-300-1 (340 Complex)
11	Aluminum Recycle Staging Area, <b>Burial Ground West of the Process Trenches</b>
12	600-22 (UFO Site)
13	618-6 Burial Ground, 300 Area RLWS & 340 Building. Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System, <b>307 Retention Basins</b>
14	Cutup Oil Dump Site
15	618-9 Burial Ground
16	600-1, JA Jones #1, UPR-600-11
17	600-47 (Debris north of 300 Area)
18	600-23 (pit near Wye Barricade)
19	400-1 (Dump area near 400 area)
20	400 Area Retired Sanitary Pond
21	Undocumented Waste Site, 400 Area Septic Tank/Cistern
22	400 Area Undocumented Sites including 400 Area Concrete Batch Plant, 400 Area Material Dumping and Building Foundation, 400 Area Construction Material Dumping Area, 400 Area Burn Pit, 400 Area Waste Dumping Area
23	400 Area Suspected Burial Ground
24	<b>300 Area South</b>

NOTE: Items in **bold** represent changes from Table 1-4.

Table 3-3. Contaminants of Potential Concern for Sites Requiring Investigation as Part of the Work Plan Scope. (2 sheets)

Site	Remediation Goal	VOCs	Metals	Anions	Radionuclides	Other <sup>a</sup>
316-4 Crib	MTCA C or 15 mrem above background	Yes	Yes	Yes	Uranium	No
618-2	MTCA C or 15 mrem above background	Yes	Yes	Yes	Uranium, gross alpha, gross beta	No
618-3	MTCA C or 15 mrem above background	Yes	Yes	Yes	Uranium	No
618-7	MTCA C or 15 mrem above background	Yes	Yes	Yes	Uranium, thorium, beryllium	No
618-13	MTCA C or 15 mrem above background	No	Via XRF field screen	No	Beta/gamma field screen	No
600-23	MTCA B or 15 mrem above background	No	Yes, plus asbestos	No	Beta/gamma field screen	No
JA Jones #1/600-1/ UPR-600-11	MTCA B	Yes	Yes	No	No	No
618-10	TBD	Yes	Yes	Yes	List 1 <sup>b</sup>	No
618-11	TBD	Yes	Yes	Yes	List 1 <sup>b</sup>	No
Solid Waste Burial Ground (Early Burial Ground)	MTCA C or 15 mrem above background	No	No	No	Uranium	No
400 Area Suspect Burial Ground	MTCA C or 15 mrem above background	No	No	No	Beta/gamma field screen	No
Aluminum Recycle Staging Area/Burial Trench West of the Process Trenches	MTCA C or 15 mrem above background	No	No	No	Uranium via field screen	No
600-47	MTCA C or 15 mrem above background	No	TBD based on RAD screen	No	Beta/gamma field screen	No
400 Area Septic Tank or Cistern	MTCA C or 15 mrem above background	No	Yes	No	Beta/gamma field screen, and gross beta	No

Table 3-3. Contaminants of Potential Concern for Sites Requiring Investigation as Part of the Work Plan Scope. (2 sheets)

Site	Remediation Goal	VOCs	Metals	Anions	Radionuclides	Other <sup>a</sup>
600-22 (UFO Site)	MTCA B	No	No	No	Gross alpha and beta	Herbicides
600-46 (Cutup Oil Dump)	MTCA A	No	Yes	No	No	TPH and PCB

**NOTE:** Chemicals routinely used in the 300 Area processes and research facilities included, as a minimum, the following:  
**Volatile Organic Compounds (VOCs)** - acetone, carbon tetrachloride, dichloroethylene, hexone, methanol, tetrachloroethylene, 1,1,1-trichloroethane, trichloroethylene, and chloroform (EMO-1026).  
**Metals** - aluminum, barium, beryllium, bismuth, cadmium, chromium, cobalt, copper, lead, lithium, magnesium, manganese, nickel, potassium, sodium, strontium, tin, vanadium, and zinc (EMO-1026).  
**Anions** - chloride, fluoride, sulfate, sulfite, phosphate, nitrate/nitrite (EMO-1026).

<sup>a</sup>Some semi-VOCs were used in the processes; however, these were commonly liquids that would have been disposed of to the 300-FF-1 Operable Unit process ponds and not the burial grounds. In addition, sampling of soils and groundwater during 300-FF-1 and 300-FF-5 characterization activities has not found semi-VOCs at levels of concern.

<sup>b</sup>List 1: The analytical approach to identify **radionuclides** that were used in 300 Area processes and may be present in the environment will be phased to initially perform gross alpha, gross beta, uranium, plutonium, and gamma energy analysis to provide an indication of contamination levels. A secondary phase, based on those initial results, will identify specific analyses that will be performed.

MTCA = *Model Toxics Control Act*  
PCB = polychlorinated biphenyl  
TBD = to be determined  
TPH = total petroleum hydrocarbons  
VOC = volatile organic compound  
XRF = x-ray fluorescence

## 4.0 DQO PROCESS SITE DECISIONS

The 300-FF-2 Operable Unit DQO process was patterned after the seven-step process outlined in EPA's guidance (EPA 1994). The decisions identified in this report were not always reached by using the DQO seven-step process. The decision makers used the format to the extent necessary to reach decisions that were justifiable. Decisions made outside this process are identified within this document. Step six (statistical evaluation) and step seven (data design optimization) were not formally utilized for any of the waste site groupings. (Decisions were made, however, on sampling strategies for a number of waste sites.)

In many instances a wide range of options and/or discussions took place regarding each waste site grouping. The following summarizes the discussions and final decisions that were made regarding each waste site group identified in Table 1-4. Further details regarding the technical information presented can be found as part of the 300-FF-2 project files associated with the DQO process discussions.

### 4.1 GROUP 1 ASHE SUBSTATION OIL/WATER SEPARATOR AND DRY WELL

#### Summary of Data:

This site is a Bonneville Power Administration (BPA) facility operating under a land-use permit with DOE. A 1992 EPA RCRA Facility Assessment made recommendations for preventive measures to be implemented at this site.

#### Discussion:

Since this site is still operating, it was the consensus of the decision makers to delete this site from the operable unit at this time.

#### Conclusions:

No action is required at this time.

### 4.2 GROUP 2 307 TRENCHES

#### Summary of Data:

Three boreholes were placed in the 307 Trenches during the 300-FF-1 RI. Characterization data from 300-FF-1 are summarized in *Summary of Remedial Investigations at the 307 Retention Basins and 307 Trenches (316-3)*, 300-FF-2 Operable Unit, WHC-SD-EN-TI-279, Rev. 0 (Hulstrom 1994). Data from Table 3-4 of the 300-FF-2 work plan (Draft A) indicate the maximum concentrations in soil for inorganics, radionuclides, and polychlorinated biphenyls (PCBs). Locations of maximum values fall generally farthest to the east in well 399-3-16 (borehole 307T-2), followed next by 399-3-17 (borehole 307T-3). Maximum values for a number of metals, volatiles, gross alpha, gross beta, and uranium were found in borehole 307T-2 within the first 12 ft of fill material. This seems to indicate that the scrapings from the pond that were most contaminated were placed first to the east and gradually filled in to the west. Well 399-3-15 has relatively the least amount of contamination even though it is

located at the headend of the trenches. The maximum concentrations of uranium-234 and uranium-238 were 58 and 66 pCi/g, respectively. This was from one sample from borehole 399-3-16 (307 T-2) located on the east end of the trenches at a depth of 10.3 ft. These values for uranium are well below the maximums found in the adjacent 300-FF-1 waste sites.

Additional information provided to the regulators included the following:

1. Annotated Table 3-4 from the work plan - The depth at which the maximum value was found was provided along with the maximum value for comparison that was found in the South Process Pond [from 300-FF-1 Phase I Remedial Investigation (RI) data], and the *Model Toxics Control Act* (MTCA) C values for nonradioactive constituents.
2. Pages 5 and 7 from *Summary of Drilling and Test Pit Activities for the 300-FF-1 Operable Unit Phase I Soil Sampling Investigation*, WHC-SD-EN-TI-038 (Weekes 1992), provide some further historical insights and field observations.
3. Table 41, "Preliminary List of Contaminants of Concern for 300-FF-1," from the 300-FF-1 work plan (DOE-RL 1990) shows what analyte classes and data are available from this investigation.
4. Figure 1 from Weekes (1992), "Borehole Location Map," shows the locations of the 307 Trenches and boreholes, relative to 300-FF-1 waste units.
5. Table 2 from Weekes (1992), "Summary of Remedial Investigation Boreholes," provides drilling related information such as total depth and depth to water.
6. Figure C-1 from Weekes (1992) shows cross-sectional stratigraphic correlation of the three 307 Trench boreholes, the depth of fill, and field radiation measurements correlated to depth.
7. Figures A-10 through A-12 from Weekes (1992), borehole summaries for the three 307 Trench boreholes, in which the maximum values from Table 3-4 in the 300-FF-2 work plan have been placed in the remarks column to indicate where they were found relative to other samples, depth, and borehole location. In addition, the values for gross alpha, gross beta, and total isotopic uranium are also provided. The total isotopic uranium was calculated by simply summing the uranium-234, uranium-235, and uranium-238 values to get an approximation for comparison to gross beta readings. All values are in picocuries per gram (pCi/g). Other information shown includes depth of fill and depth to groundwater.
8. Other information made available for review included analytical data from 11 groundwater wells in the vicinity of the 307 Trenches. Data were obtained from the HEIS database. Groundwater radionuclide data from the Phase I RI report for 300-FF-5 was also reviewed from wells upgradient and downgradient to the 307 Trenches. No specific information attributable to the 307 Trenches was discernable.
9. The 307 Trench area has been stabilized and is presently covered with gravel. Two buildings are covering part of the west end of the trenches. A railroad track crosses the center of the waste site.

## **Discussion:**

The decision makers agreed that the existing data for the 307 Trenches are sufficient to determine an action; however, the DQO process was not used to make that determination.

This site contains soils from the south process pond located in the 300-FF-1 Operable Unit. The criteria to be established in the 300-FF-1 Operable Unit will be followed for this site.

The review of area wells indicate that the impact to groundwater from the 307 Trenches could not be distinguished from other known contamination in the area and from the flux in the river stage.

### **Step 1. Problem Statement**

- Leaving materials in place at the 307 Trenches may pose a risk to worker safety and to groundwater.

### **Step 2. Decisions**

- None identified by 300-FF-2 decision makers.

### **Step 3. Decision Inputs**

- Borehole information is contained in *Summary of Remedial Investigations at the 307 Retention Basins and 307 Trenches (316-3), 300-FF-2 Operable Unit* (Hulstrom 1994).
- The decision makers agreed that a Qualitative Risk Assessment (QRA) was not to be performed.

### **Step 4. Study Boundaries**

- The 307 Trenches area is defined by boundary markers. Soils in the vicinity of the site have been sampled as part of the 300-FF-1 Operable Unit characterization.

### **Step 5. Decision Rule(s)**

- Using available data and the criteria established in the 300-FF-1 Operable Unit, if data show that the 307 Trenches are greater than the 300-FF-1 cleanup standards, then those areas will be remediated according to 300-FF-1 decisions. This will be addressed in the LFI report after review of the data has been conducted and 300-FF-1 decisions have been finalized and documented.

## **Conclusions:**

Sufficient data exist from 300-FF-1 investigations. No QRA is required for this site. A review of the 300-FF-1 data will be documented in the LFI report and a recommendation will be made.

### 4.3 GROUP 3      618-10 AND 618-11 BURIAL GROUNDS AND ASSOCIATED UPRs (1-10)

#### Summary of Data:

The 618-10 and 618-11 Burial Grounds contain low- to high-activity dry wastes, fission products, plutonium, and other transuranic constituents in a variety of waste forms. Insufficient information exists to determine if a threat to human health and the environment exists. 618-11 is located near the Washington Public Power Supply System (Supply System) Nuclear Project #2 reactor. The 618-11 site is specifically identified in the Hanford Defense Waste Final Environmental Impact Statement as a site that will be exhumed in the future.

Information provided during the DQO discussions relative to these waste sites included the following:

1. Location maps from the Draft A work plan and other related documents showing direction of groundwater flow, groundwater, and/or other geotechnical borings located near the waste sites. (Some of this information was obtained from Supply System No. 2 reports relative to the 618-11 Burial Ground location.) This included a listing of wells and the identification of wells that would be suitable for groundwater monitoring in the area of the waste sites (wells 699-S6-E4A, 699-S6-E4B, and 699-S6-E4D at the 618-10 Burial Ground and wells 699-12-4D, 699-13-1A, and 699-13-1B at the 618-11 Burial Ground).
2. Historical information relative to the sites from DeFord et al. (1994) including the results of surface stabilization activities that took place in 1983.
3. Results of air monitoring activities, knowledge of waste types and methods of disposal, and estimates of quantity of waste disposed.
4. Results of annual surface radiological surveys that have been conducted.
5. Results of groundwater monitoring activities that have occurred at wells in the vicinities of these waste sites, including data printouts from the HEIS database.
6. A summary of how animal/insect intrusion at a burial ground is handled.
7. A discussion of field investigation and analytical work previously conducted by PNL as reported in *Characterization of the Hanford 300 Area Burial Grounds - Final Report Decontamination and Decommissioning* (PNL 1980) that concluded no contamination above background was found in the soils underlying the burial grounds.
8. A rationale for the proposed treatability test as described in the Draft A work plan. The steps in the investigational approach proposed in the work plan build on each other, culminating in the treatability test. The rationale for performing the treatability test is for the flow of information that leads to an Interim Remedial Measure (IRM).

#### Discussion:

The decision makers agreed that the burial ground contents would not be removed until repackaging, storage, and disposal facilities for transuranic waste are available. It is anticipated that over the course of the next 10 years there will not be a facility for the packaging and disposal of transuranic



wastes contained in the 618-10 and 618-11 Burial Grounds. It was also recognized that the 618-11 Burial Ground is located next to an active industrial area, the Supply System No. 2 power plant. With the decision made to postpone excavation, a treatability test at this time would not be applicable until a later date.

The approach for these burial grounds is addressed in two phases. The general LFI approach for Phase 1 at these two sites will be structured to limit the overall field investigation effort to nonintrusive activities (surface radiation and geophysical surveys) and yet be proactive in the continued monitoring of these burial grounds until such time as facilities and technologies are available to handle this waste. Phase 2 activities will be initiated when these capabilities exist. This approach is reflected in the text of Tables 1-2 and 1-3.

The Environmental Restoration Contractor (ERC) will locate one new well to monitor the 618-11 Burial Ground, identify which well(s) to monitor the 618-10 Burial Ground, and determine the frequency of monitoring. The contaminants of concern are the same as those listed in the *Description of Work for the 300-FF-2 Operable Unit Groundwater Limited Field Investigation at the 618-10 and 618-11 Burial Grounds* (Singleton 1995). Specifically, volatile organic compounds, metals, anions, gross alpha, gross beta, and total uranium are the contaminants of concern for both burial grounds. Protocol was discussed and the ERC agreed that the procedures were in place to collect a sample if contaminants of concern were detected during the drilling process. Sampling will occur semiannually for one year after which monitoring may be performed by either the CERCLA or Site-Wide monitoring programs. Data will be evaluated and reported as part of the LFI report.

This data-gathering activity is outside the scope of the DQO process. No decisions are to be made using this data at this time. No data quality requirements will be established. The purpose for monitoring the groundwater downgradient of the 618-10 and 618-11 Burial Grounds is to determine if any contaminants are leaching from these burial grounds.

#### **Conclusions:**

Install one new groundwater well downgradient of the 618-11 Burial Ground and sample groundwater from selected wells near both burial grounds semiannually for one year. Evaluate and present the data as part of the LFI report. Samples will be analyzed using standard (SW-846) analytical methods. A summary level data package with no immediate data validation will be adequate at this time.

#### **4.4 GROUP 4      618-1, 618-2, 618-3, UPR-300-14 (RELEASE NEAR 618-1 BURIAL GROUND), 303-M URANIUM OXIDE FACILITY, AND 303-M STORAGE AREA**

##### **Summary of Data:**

Low-level radioactive waste materials have been deposited in the burial grounds, and in some instances structures such as buildings or parking lots have been built over the waste sites. In the case of the 303-M Uranium Oxide Facility (and the 303-M Storage Area), this RCRA facility was transitioned to the CERCLA program for action because it lies on top of the 618-1 Burial Ground.

Other information provided during the DQO discussions relative to these waste sites included the following:

1. Air monitoring data, information on waste types, method of disposal used, and indications of quantity of waste disposed from historical records
2. Results of annual surface radiological surveys that have been conducted
3. Results of groundwater monitoring activities that have occurred at wells in the general vicinity of these waste sites, including data printouts from the HEIS database
4. Historical information relative to the sites from DeFord et al. (1994), including the results of surface stabilization activities, and historical photographs showing the operation of the waste site.

**Discussion:**

Under the burial ground strategy discussed earlier, the 618-2 and 618-3 Burial Grounds will eventually be excavated; for the 618-1 Burial Ground, UPR-300-14, the 303-M Uranium Oxide Facility, and the 303-M Storage Area, excavation will be deferred until 300 Area D&D activities.

**Step 1. Problem Statement**

- Burial grounds pose a risk to human health and the environment and will be removed using the observational approach.

**Step 2. Decisions**

- Does material in the burial grounds exceed action levels?

**Step 3. Decision Inputs**

- Field screening/sampling of excavated material.
- Confirmation sampling of the footprint to determine completion.

**Step 4. Study Boundaries**

- The footprint of the burial grounds and soils directly beneath.

**Step 5. Decision Rule(s)**

- Using the observational approach, if the soil below the excavated material exceeds MTCA Method C levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

**Conclusions:**

The 618-2 and 618-3 Burial Grounds will follow an observational approach to removal after issuance of the IROD. The 618-1 Burial Ground, UPR-300-14, the 303-M Uranium Oxide Facility, and the 303-M Storage Area excavation will be addressed in conjunction with 300 Area D&D activities.

## **4.5 GROUP 5      618-7 BURIAL GROUND**

### **Summary of Data:**

Drummed containers of solvent with moderate amounts of uranium were buried in the burial ground along with hundreds of drums of zircaloy chips covered with water. Dry zircaloy metal is pyrophoric when in contact with air.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Air monitoring data, information on waste types, method of disposal used, and indications of quantity of waste disposed from historical records
2. Results of annual surface radiological surveys that have been conducted
3. Results of groundwater monitoring activities that have occurred at wells in the general vicinity of this waste site, including data printouts from the HEIS database
4. Historical information relative to the site from Deford et al. (1994), including the results of surface stabilization activities, and historical photographs showing the operation of the waste site.

### **Discussion:**

Under the burial ground strategy discussed earlier, the 618-7 Burial Ground will eventually be excavated. Concerns for worker safety would be addressed prior to the initiation of any excavation work.

#### **Step 1. Problem Statement**

- This site may pose a risk to workers and groundwater.

#### **Step 2. Decisions**

- Does material in the burial grounds exceed action levels?

#### **Step 3. Decision Inputs**

- No further investigative data are required.
- Field screening/sampling of excavated material.
- Confirmation sampling of the footprint to determine completion.

#### **Step 4. Study Boundaries**

- The footprint of the burial grounds and soils directly beneath.

#### **Step 5. Decision Rule(s)**

- Using the observational approach, if the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

#### **Conclusions:**

The 618-7 Burial Ground will follow an observational approach to removal after issuance of the IROD.

#### **4.6 GROUP 6 UPR-600-22 [600-21 (WINDROW SITE)]**

##### **Summary of Data:**

An airborne release of radioactive contamination from the 618-11 Burial Ground created this site in 1967. Characterization/stabilization activities in 1972 found no evidence of further contamination.

##### **Discussion:**

Based on the existing data, this site will be removed from the scope of the work plan. The existing data include historical sampling data and a 1995 surface radiation survey. Because of the close proximity to 618-11, the decision makers have accepted addressing this site during remedial action activities at 618-11. This site will be closed out when the 618-11 site is closed out.

##### **Conclusions:**

No action is required at this time. This site will be included with remedial action decisions for the 618-11 Burial Ground.

#### **4.7 GROUP 7 618-13 BURIAL GROUND (MOUND)**

##### **Summary of Data:**

According to DeFord et al. (1994) the mound of soil that forms the burial ground came from contaminated topsoil that was removed from the 303 Building area in approximately 1950. The nature of the contamination is unknown. Other potential historical uses of the site, such as a blast shield, were also discussed.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Results of a 1995 surface radiological surveys that was conducted
2. Results of a 1995 geophysical survey that was conducted (Bergstrom et al. 1995)
3. A BHI proposal for a method of characterization of the mound utilizing field screening methods to obtain information for radioactivity, volatiles, and metals. A possibility of utilizing this

material as fill in the 300-FF-1 Process Ponds after issuance of the Record of Decision was also discussed

4. A statistical approach to sampling and analysis using several different scenarios was discussed as a means of developing a possible sampling strategy.

**Discussion:**

The decision makers agreed that x-ray fluorescence (XRF) field screening and beta-gamma field screening would be used at the mound.

The decision makers agreed to defer the confirmatory sampling strategy for the mound until the sampling and analysis plan is written, since work is not expected to commence within the next year. The following remedial design considerations are to be incorporated.

- Each loader bucket will be field screened.
- Confirmation samples will be sent to a laboratory to confirm the field screening. A statistician will determine how many samples are required.
- Excavation will continue with screening up to a depth of 1 ft below grade.

**Step 1. Problem Statement**

- The site may pose a risk from radioactivity and metals to workers.

**Step 2. Decisions**

- Can this site be released for any use?

**Step 3. Decision Inputs**

- Provide a statistical number of samples needed for representativeness.
- Field screening/analytical data to determine final disposition of excavated material.

**Step 4. Study Boundaries**

- The soils in the area of the mound and 20 ft around the mound will be surveyed.

**Step 5. Decision Rule(s)**

- If the excavated material field screens below the regulatory limits, then it will be separated from the contaminated material. Soil will be maintained in an industrial area.
- If levels for contaminants of concern exceed MTCA or 15 mrem/yr above background for industrial landuse at 1 ft below grade, then the site will be reevaluated.

## **Conclusions:**

The 618-13 Burial Ground will follow an observational approach to removal after issuance of the IROD.

### **4.8 GROUP 8      UNDOCUMENTED SOLID WASTE BURIAL GROUND (NEAR 618-8), 618-8 BURIAL GROUNDS, SOLID WASTE BURIAL GROUND (EARLY BURIAL GROUND)**

#### **Summary of Data:**

The Solid Waste Burial Ground (Early Burial Ground) appears in documentation to have existed at a previously undocumented location. Its location and contents are unknown. The Undocumented Solid Waste Burial Ground (near 618-8) appears to consist of construction related debris, but the nature and extent of contamination is unknown. The 618-8 Burial Ground is thought to be a single trench. Its configuration and contents are unknown. All of these sites are immediately north of the 300 Area.

Investigation activities to locate the Early Burial Ground were conducted in parallel with the DQO process discussions. Historical review, combined with surface geophysical surveys, could not confirm the location of the Early Burial Ground. After discussions with the decision makers it was determined that this site could be deleted from the work scope. Discussion of the investigation will be included in the LFI report for completeness.

From surface geophysics surveys and field inspections the Undocumented Solid Waste Burial Ground (near 618-8) appears to be relatively well defined but contains scattered surface debris that appears to be construction/building demolition related.

A proposal to modify the Draft A work plan (DOE-RL 1994) approach to investigation of the 618-8 Burial Ground was provided to the regulators for review and discussion. Investigations that have been conducted since 1980 of this waste site included geophysical surveys, shallow test hole installation, and review of groundwater data from wells in the nearby vicinity. The historical data collectively indicates the following: (1) the burial ground is not a well-defined trench as most other 300 Area burial grounds have been shown to be; (2) the extent of the contamination is beyond the marked boundaries of the burial ground; (3) some buried materials are radioactive and appear to be related to uranium contamination; (4) shallow test holes (1980) and later excavations (1987) confirm the presence of construction debris (scrap metal, wire, pieces of sheet rock, etc.); (5) the surface is presently stabilized (i.e., no surface contamination areas have been reported from recent surveys); and (6) the northern boundary of the burial ground area is currently posted as "Underground Contamination" and has barbed wire around part of it. With regard to both the 618-8 Burial Ground and the "Undocumented Solid Waste Burial Ground," it was concluded that no further investigations are necessary. This included the elimination of the proposed groundwater well at the 618-8 Burial Ground.

#### **Discussion:**

The 618-8 and Undocumented Solid Waste Burial Ground are deferred until D&D activities for the 300 Area are conducted since the parking lot over the 618-8 Burial Ground is still in use.

### **Step 1. Problem Statement**

- Burial grounds pose a risk to human health and the environment.

### **Step 2. Decisions**

- Does material in the burial grounds exceed action levels?

### **Step 3. Decision Inputs**

- Field screening/sampling of excavated material.
- Confirmation sampling of the footprint to determine completion.

### **Step 4. Study Boundaries**

- The Undocumented Solid Waste Burial Ground (near 618-8) is defined by surface geophysics surveys and contains scattered surface debris.
- The 618-8 Burial Ground is defined by boundary markers, drawings, and surface geophysics surveys.

### **Step 5. Decision Rule(s)**

- Using the observational approach, if the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

### **Conclusions:**

No further action is required at the Early Burial Ground. The 618-8 and Undocumented Solid Waste Burial Grounds are to be addressed in conjunction with 300 Area D&D activities. No groundwater well installation near the 618-8 Burial Ground is necessary.

## **4.9 GROUP 9      316-4 CRIB**

### **Summary of Data:**

200,000 L of hexone-bearing uranium liquid wastes was placed in two inverted bottomless tanks. Approximately 1,000 kg of nitrate, 2,000 kg of uranium, and 3,000 kg of hexone were released to the soil. The exact nature and current extent of contamination in the vadose zone and groundwater is unknown. The crib is adjacent to the southeast corner of the 618-10 Burial Ground and is delineated by concrete marker posts and a concrete pad where the pumphouse was located. The bottom of the tanks is about 10 ft below grade. Depth to groundwater in the area is approximately 68 ft or between 50 to 60 ft from the bottom of the tanks. A schematic of the tanks and the surrounding structures was provided from the Draft A work plan.

Any groundwater monitoring activities at this site will be performed in conjunction with the 618-10 Burial Ground, which is immediately upgradient. Groundwater wells downgradient of the crib have

been used for monitoring purposes since 1958. Routine monitoring is now part of the Sitewide Monitoring program performed by Pacific Northwest National Laboratory (PNNL).

Other information provided during the DQO discussions relative to this waste site included the following:

1. A discussion of field investigation and analytical work previously conducted by PNNL as reported in *Characterization of the Hanford 300 Area Burial Grounds - Final Report Decontamination and Decommissioning* (PNL 1980)
2. A discussion of a more recent geotechnical evaluation of the site that was performed by BHI (BHI 1994)
3. Results of the surface radiological survey and geophysical survey (Bergstrom et al. 1995)
4. A discussion of the model proposed for use in the 100 Areas to calculate the maximum contaminant concentrations in soil that could remain in the soils at a waste site and yet be protective of groundwater
5. A discussion of rough-order-of-magnitude costs for characterization versus removal without characterization was provided.

#### **Discussion:**

The contaminants of concern are uranium, hexone, and nitrate. Risk-based action levels for closure must be calculated.

Cleanup levels for uranium could be as low as 3 to 6 pCi/g in order to be protective of groundwater. This number is 100 times the proposed maximum contaminant level (MCL). However, it was agreed that the groundwater protection issue will be decided first in the 100 Areas and adopted in 300-FF-2. (The 15-ft cleanup depth for contaminated soils as defined by MTCA is still an issue that is being discussed within DOE and the regulatory agencies.)

Past experience with similar sites indicates the contamination is concentrated directly below the crib and is assumed to be within the first 5 ft.

The issue of protecting groundwater is the driving force for cleaning up this site.

It was agreed that the "top of the engineered structure" will be defined in the DOW.

#### **Step 1. Problem Statement**

- The soils at this site may pose a risk to human health or the environment or groundwater due to the release of radioactive contaminants.

#### **Step 2. Decisions**

- Does material in the burial grounds exceed action levels?



### Step 3. Decision Inputs

- BHI Internal Memo, K.R. Fecht and B.H. Ford to R.A. Carlson, September 26, 1994, "Geotechnical Review at the 316-4 Crib" (BHI 1994).
- PNNL document *Characterization of the Hanford 300 Area Burial Grounds - Final Report Decontamination and Decommissioning* (PNL 1980).

### Step 4. Study Boundaries

- Soils directly beneath the crib with some lateral extension.

### Step 5. Decision Rule(s)

- Using the observational approach, if the soil below the excavated material exceeds MTCA method C or 15 mrem/yr above background exposure for the contaminants of concern, then excavation will continue up to 15 ft below the top of the engineered structure. (The applicable section for Group 9 wastes sites is MTCA 173-340-740.)
- If contamination exceeds risk levels at 15 ft below the top of the engineered structure, then contaminant distribution and feasibility of continued excavation will be reevaluated.
- If groundwater protection criteria are exceeded after excavation to 15 ft below the top of the engineered structure, then the site will be reevaluated.

### Conclusions:

The 316-4 crib will follow an observational approach to removal after issuance of the IROD. Groundwater sampling for the 618-10 Burial Ground will also satisfy monitoring requirements for the 316-4 crib.

## 4.10 GROUP 10 UPR-300-1 (340 COMPLEX, WELL 399-3-8)

### Summary of Data:

A leak from a transfer pipe near the 340 complex that released fission products into the soils was discovered in late 1969. Some contamination was removed, but the extent of remediation is undocumented. Groundwater well 399-3-8 was installed at the location of the release, but its location and present status is uncertain.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Results of surface radiological surveys
2. Results of historical groundwater sampling from wells 399-3-3, 399-3-7, 399-3-11, and 399-3-12 targeted specifically at gross beta, cesium-137, and strontium-90

3. Results from preliminary surface geophysical surveys and further historical research that were being conducted in parallel with the DQO process discussions.

#### **Discussion:**

It was agreed that wells 399-3-12, 399-3-11, 399-3-3, and 399-3-7 would provide the current groundwater data.

The decision makers agreed to document the effort to locate the well in the LFI report. It was suggested that a letter report would tie the well to the Hanford well book (PNL 1993). Ecology requested a copy of the letter report be sent to Dib Goswami.

#### **Step 1. Problem Statement**

- The location and status of well 399-3-8 is uncertain. A risk to groundwater may exist if the well was not abandoned properly. In order to assess the risk, some investigation must be done.

#### **Step 2. Decisions**

- Does well 399-3-8 act as a conduit and pose a risk to groundwater?

#### **Step 3. Decision Inputs**

- Existing gross beta, cesium-137, and strontium-90 data in surrounding monitoring wells 399-3-12, 399-3-11, 399-3-7 and 399-3-3.
- Geophysical data of the site to determine the location of the well.

#### **Step 4. Study Boundaries**

- The area south of the 340 Building where the release occurred defines the site boundaries. UPR-300-2 and UPR-300-11 occurred in the same general vicinity.

#### **Step 5. Decision Rule(s)**

- If geophysics finds the well, then excavate and evaluate fitness-for-use.
  - If well 399-3-8 is fit for use, then announce the availability of the well for others use.
  - If well 399-3-8 is not fit for use, or if others do not require its use, then abandon properly.
- If the downgradient wells show elevated total beta as compared to the upgradient wells, well 399-3-8 may pose a risk. This information will be communicated to the appropriate group within D&D and the well will be deferred to D&D.

#### **Conclusions:**

Perform a geophysical survey, evaluate existing groundwater data, and then abandon or transfer the well to another user. Document the results in the LFI report and a letter report sent to potential interested parties (Hanford Wells report, Ecology, etc.).

#### **4.11 GROUP 11 ALUMINUM RECYCLE STAGING AREA AND BURIAL GROUND WEST OF THE PROCESS TRENCHES**

##### **Summary of Data:**

The Aluminum Recycle Staging Area and the Burial Ground West of the Process Trenches are inactive solid waste sites that have been designated as surface contamination areas on the north end of the 300 Area. Affected areas are bound by light-duty post-and-chain barricades and are posted as radiological "Surface Contamination Areas (SCA)" (now called Soil Contamination Areas).

##### **Discussion:**

As a partial response to inquiries during the DQO process, a small-scale assessment was performed to determine the optimum combination of possible removal methods and the relative distribution of the metals shavings. The results of the investigation and surface radiological survey were presented to the regulators for discussion. In parallel, a paper authored by John Lowe entitled, "Preliminary Risk Assessment Evaluation - Aluminum Recycle Staging Area and Burial Ground West of the Process Trenches" was prepared for discussions with the regulators. (This paper can be found as part of the 300-FF-2 project files.)

After further discussions regarding exposure pathways, risk scenarios, radiological surveys, and possible cleanup scenarios, the decision makers agreed that DOE would handle the Aluminum Recycle Staging Area (and Burial Ground West of the Process Trenches) as a landlord activity using DOE radiological requirements to clean up the site to the degree that it could be "down posted" from its radiological SCA status.

The site will remain part of the 300-FF-2 Operable Unit. These decisions were made without using the DQO process, and the quantity and quality of the data were not determined by the decision makers. All data and investigations to date will be included in the work plan.

##### **Conclusions:**

DOE will handle the Aluminum Recycle Staging Area (and Burial Ground West of the Process Trenches) as a landlord activity using DOE radiological requirements to clean up the site to the degree that it could be "down posted" from its radiological SCA status. All data and investigations will be included in the LFI report. Remaining areas will be down posted when an appropriate disposal facility is available.

#### **4.12 GROUP 12 600-22 (UFO SITE)**

##### **Summary of Data:**

This site appears on aerial photographs as a large, asterisk-shaped area. It is believed to be an old bombing target site that was used by the U.S. military for practice with live bombs (Roos and Woodworth 1989). According to Site personnel, the asterisk-shaped area was used for bombing practice around 1942, before construction began on the Hanford reactors.

Bomb fragments are scattered throughout the site but are concentrated at the site's southeastern corner. No unexploded bombs have been found in the area (Roos and Woodworth 1989).

### **Discussion:**

- John Lowe was tasked with determining risk levels for herbicides at the UFO Landing Site. (This was superseded by further discussion where it was determined that MTCA B cleanup levels would be used.)
- There is uncertainty over what types of herbicide analyses are available. Larry Hulstrom stated that SW-846 Method 8150 provides results for organic herbicides, including 2,4-D; 2,4-DB; 2,4,5-T; 2,4,5-TP; Dichloroprop; MCPA; MCPP; and others. It is interesting to note that these organic herbicides were not available for use until around 1950. Herbicides used at this site are thought to be pre-Hanford (pre-1943), but this has not been confirmed. The Tri-Parties agreed to analyze the samples for herbicides using SW-846 Method 8150 for organics.

### **Step 1. Problem Statement**

- Radiological contamination, unexploded ordnance, and herbicide may pose a potential risk to the health and safety of the public or the environment.

### **Step 2. Decisions**

- Do herbicide residues exist in high enough levels to pose risk?
- Do ordnance chemical residues exist at high enough levels to pose risk?
- Is there unexploded ordnance?
- Is there any radiological risk posed by this site?

### **Step 3. Decision Inputs**

- Decision makers requested the opportunity to review the information contained in the *Ordnance and Explosive Waste Records Search Report* (DOE-RL 1995) and the ecological survey.
- Verify herbicide data.
- The results of a flyover by EG&G in June 1988. No radioactivity was detected at the 600-22 site; however, this information did not meet the level of assurance required by the regulators for deciding not to require further field information.
- The results of an ecological survey (Hulstrom and Landeen 1995) were provided. This information did not meet the level of assurance required by the regulators for deciding not to require further field information relative to herbicides.
- Two samples and their duplicates will be taken from the scarred area: one from the center and one from the tip of a spoke. The purpose of the samples is to verify the presence or absence of herbicide by analytical methods and radioactivity using gross alpha and gross beta analyses.

### **Step 4. Study Boundaries**

- The site is approximately .25 mi<sup>2</sup> in size, 1 mile west of the 300 Area, and is concerned with the surface only. There is a clear pattern of the affected area as indicated from aerial photographs.

## **5. Decision Rule(s)**

- If gross alpha or gross beta are detected at greater than 15 mrem/year over background, then further information will be collected. Background is as defined in the 300-FF-1 Phase I RI report (DOE-RL 1993).
- If herbicides are found above MTCA Method B, then further investigation will be required.
- If herbicides, gross alpha, and gross beta are below action levels as determined by sample analysis, then no risk assessment will be required.

### **Conclusions:**

Soil samples for herbicides, gross alpha, and gross beta analysis will be collected at the center and from the tip of one spoke. Each sample will have a split taken for analysis at a separate laboratory. It was agreed that a full Contract Laboratory Program (CLP) package will be required on these samples. No data validation will be performed at this time.

## **4.13 GROUP 13 618-6 BURIAL GROUND, 300 AREA RLWS AND 340 BUILDING COMPLEX, 300 AREA RETIRED RLWS, 300 AREA PROCESS SEWER SYSTEM, 300 AREA SANITARY SEWER SYSTEM, 307 RETENTION BASINS**

### **Summary of Data:**

Uncertainties exist relative to the locations and number of moves that occurred for the 618-6 Burial Ground. Information on the integrity of the sewer systems, data on radioactivity levels, and sewer system configuration drawings are not located in one centralized location for use in the future to facilitate remedial alternative evaluation and design. The 300 Area Radioactive Liquid Waste Sewer (RLWS) and 340 Building Complex, 300 Area Process Sewer System, 300 Area Sanitary Sewer System, and 307 Retention Basins are still active.

### **Discussion:**

D&D will remediate the sewer lines. Any CERCLA decisions will be deferred until D&D activities occur.

Investigation of the original 618-6 Burial Ground location(s) is deferred to when the 300 Area buildings are addressed. The burial ground contents were eventually moved to 618-10 and will be considered as part of that site.

The 307 Retention Basins are active waste sites and therefore do not meet the criteria for retaining sites in the work scope. These basins will be deleted from the scope of the work plan and deferred until D&D of the 300 Area buildings.

No further action is required for this group (618-6 Burial Ground, 300 Area RLWS and 340 Building Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System, and 307 Retention Basins) because each site will be addressed when the balance of the 300 Area (i.e., when the buildings) will be addressed. The rationale to postpone activity at these waste

sites is that changes in system configurations could occur before remedial actions are initiated and a one-time data collection effort is preferred.

#### **Conclusions:**

No further action is required. These sites will be addressed in conjunction with 300 Area D&D activities.

#### **4.14 GROUP 14 CUTUP OIL DUMP SITE**

##### **Summary of Data:**

Debris and contaminated soils that appear to be pre-Hanford were identified at a site located adjacent to the Columbia River north of the 300 Area. An oil-stained area approximately 1 yd<sup>2</sup> in area and shallow in appearance was found. Surface debris is also scattered in the immediate vicinity of the oil-stained area.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Historical aerial photographs of the area that show the site to be related to a gravel pit operation located in Pit 8 to the west of the waste site during the mid-1970's.

##### **Discussion:**

Based on the information presented to the regulators, this site was designated as a landlord activity. As a housekeeping step, discolored soil will be removed and disposed as appropriate. Additional debris would be disposed appropriately. Remaining soil will be less than MTCA method A values.

- The initial conceptual model (that the contaminated area was approximately 2 yd<sup>2</sup>, 12 to 18 in. deep) was revised based on field activities initiated in June 1995. In actuality, the site is much larger, including a trench, center pit, and south pit, with a much larger contaminated volume than originally thought. In general, the boundary between clean and oil-contaminated soils can be determined visually.
- Analytical results of confirmatory sampling were provided. The trench and center pit composite samples show PCBs, total petroleum hydrocarbons (TPH), and metals all below MTCA method A. The south pit side walls and bottom composite sample has PCBs between 1 and 10 ppm, which exceeds the MTCA method A standard of 1 ppm. TSCA was introduced as a standard that could be invoked for accepting these PCB levels. A discussion on the merits of retaining the MTCA standard over the TSCA standard ensued. The Tri-Parties agreed to utilize the original criterion of cleanup to MTCA method A standards. The south pit is a relatively shallow site, and additional excavation will not require shoring. Field screening will be used to determine when contaminated soil is removed and the site is ready for confirmation sampling. Once field screening indicates that contaminated soil has been removed, one composite sample of four to six grabs from the walls and bottom of the south pit will be taken and analyzed for PCBs.
- It was agreed that confirmatory sampling and analysis using an SW-846 equivalent method for

PCBs will be done on the trench and the center pit. Previous confirmatory samples utilized an immunoassay method for PCB determination, and this method was determined to be inadequate for closure of the site. Three composite samples of four to six grabs each will be analyzed for PCBs:

1. Trench walls and bottom
  2. Center of the pit walls
  3. Center of the pit bottom.
- Following acceptable confirmatory sampling results, ERC will prepare a short letter report stating what cleanup level was achieved. It was agreed that this letter report will be transmitted to the EPA Region X office as well as to Linda Dietz for entry into the Waste Information Data System (WIDS).
  - In the DQO Summary, this site is considered a landlord responsibility. In the work plan, Cutup Oil Drum Site will be referred to as "other." It was agreed that the work plan should also state that the site was cleaned up to MTCA method A as a part of landlord responsibilities.
  - It was agreed that an SW-846 summary package is of adequate quality for the Cutup Oil Drum Site for confirmatory sample analysis.

**Conclusions:**

Remove the discolored soil and surface debris as a landlord activity. Document completion of this activity in the LFI report and in a letter to the EPA Region X office.

**4.15 GROUP 15 618-9 BURIAL GROUND**

**Summary of Data:**

The 618-9 Burial Ground consisted of an open excavation or trench. Waste deposited in this burial ground reportedly included 5,000 gal of uranium-contaminated organic solvents that were packaged in 55-gal drums. In 1991 the site was exhumed and all waste was removed via an Expedited Response Action (DOE-RL 1991).

**Discussion:**

The decision makers agreed that this site did not pose any further risk because it has already been remediated via an Expedited Response Action. It will still be addressed in the Record of Decision for the 300-FF-2 Operable Unit.

**Conclusions:**

No further action is required at this time.

**4.16 GROUP 16 600-1 (PIT NORTH OF 300 AREA), JA JONES #1 (PIT NORTH OF 300 AREA), UPR-600-11 (ASSOCIATED WITH 600-1 AND JA JONES #1)**

**Summary of Data:**

The area appears to have received construction related waste, discarded paint, and contaminated fill material. The contaminated fill material was removed shortly after deposition. Some subsidence exists throughout the area, which has been backfilled to grade with clean fill. Discussions with a site employee identified during the DQO process confirmed that a quantity of various types of paint had been disposed of at the 600-1 site in the late 1970's.

**Discussion:**

Historical information indicates that in the 600-1 pit truckloads of paint cans were dumped, and paints and solvents were spilled. The following approach was one of several discussed: Geophysics will be used to locate the cans; soil gas survey over the marked area only; one test pit will be placed where geophysics and soil gas survey indicate there is paint.

The decision makers agreed that a radiation survey was not required and were satisfied that the earlier discovered radioactive material was completely removed.

The historians have found two aerial photographs from 1976 and 1983. A portion of the 1976 photographs has been enlarged. The first photograph was taken 1 year before dumping; the second photograph was taken several years later with cover. The pictures show the size of the pit and the general area where the paints were disposed can be identified.

Cost estimates were provided for the proposed 600-1 investigations. The ERC team's estimate proposed soil gas and geophysics surveys that were robust enough to allow leaving paint cans in place if no contamination was found. A discussion ensued on how much characterization work should be done prior to excavating.

The regulators agreed that field XRF and the organic vapor analyzer can be used to make the decision to excavate or not excavate (a "Go" or "No-Go" decision). If a "No-Go" decision is made, confirmatory samples will be taken and sent to the laboratory for analysis. DOE will determine if field screening is sufficient to make a "Go" decision.

RL later agreed that a decision to excavate can be made when contaminants are detected using field screening methods.

**Step 1. Problem Statement**

- The contaminants at this site may pose a chemical risk to the public.
- Contaminants of concern may exist in levels within the burial grounds that may pose a risk to the health and safety of the public or the environment in a residential scenario. It was agreed that contaminants of concern are lead, cadmium, chromium, barium, petroleum distillates (such as naphtha), methyl ethyl ketone, alcohols, acetone, toluene, and xylene. Mercury was discussed but not included because it would be present in very small amounts as an insecticide and should not be a COC. The listed COCs are possible constituents of paint and serve as indicators of paint contamination.



## **Step 2. Decisions**

- Does contamination from discarded paint pose a risk to the public or environment?
- Paint cans identified by an electromagnetic induction (EMI) survey will be excavated.
- Do contaminants of concern exceed MTCA method B?

## **Step 3. Identify the Inputs to the Decision**

- The footprint, as identified in the 1976 photograph, will be surveyed using an EMI or other metal detector survey to identify the suspected paint disposal area, on a (suggested) 20-ft grid, to locate paint cans. Areas that are excavated will use field screening data during excavation to determine when confirmatory samples for laboratory analysis should be taken.

## **Step 4. Study Boundaries**

- The berm around the depression defines the boundary of the site.
- The footprint of the deepest part of the pit only, as seen in the 1976 photograph.

## **Step 5. Decision Rule(s)**

- Potential subsidence problems exist in the area of these sites. Stabilization would be performed only if it was decided that no excavation is required to remove chemical contamination. This would then be only a landlord issue.
- If MTCA Method B is exceeded for the listed contaminants of concern, the material will be excavated and disposed of properly. If paint cans are excavated, they will be disposed of properly.

## **Conclusions:**

The area associated with the dumping of paint will be addressed via the observational approach to removal after issuance of the IROD.

## **4.17 GROUP 17 600-47 (DEBRIS NORTH OF 300 AREA)**

### **Summary of Data:**

The 600-47 site is located on either side of the Treated Effluent Disposal Facility (TEDF) outfall line north of the 300 Area. Three Underground Radioactive Material (URM) areas and one soil contamination area (SCA) exist on the north side of the outfall line and one URM is on the south side. Radioactive contamination ranges from 2,000 to 200,000 dpm beta direct. All of the four URMs have been stabilized. Aerial photographs from 1948 suggest a pattern of "drive-through" surface disposal. Evidence of other surface debris exists in the immediate area that suggests a demolition debris waste area.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Results of a walkover inspection of the site to determine the extent of the site

2. A 1948 aerial photograph of the area that was enlarged to more closely show the nature of the site
3. Copies of the logbook pages from the investigations conducted during the TEDF outfall line construction
4. Copies of radiological survey reports for the contaminated areas within the site.

#### **Discussion:**

One of the URM's had more contamination in the soil than could be readily removed. More detail will be required on this site. It was agreed that the horizontal extent is well enough defined, although not the vertical extent.

BHI was tasked to research the 11 anomalies from the TEDF outfall to determine if these contain buried waste. If there is the possibility that any one site contains buried waste, it will be added to the scope of the work plan.

There was some uncertainty regarding the 11 anomalies discovered during ground-penetrating radar work to prepare for the TEDF outfall construction. Further records investigation revealed that six of these anomalies were investigated by using shovel excavation. One site contained fire-cracked rocks and clam shells, which may be of cultural resource significance. Other sites had piles of rocks. One site contained miscellaneous debris, including construction debris, cinderblock fragments, river rock, wire, and tar paper. This site underwent rad and organic vapor meter surveys, with no detects. An XRF survey revealed no unusual heavy metals. After examining the six anomalies, TEDF outfall construction proceeded as originally planned. There is no change to the summary document for this site.

#### **Step 1. Problem Statement**

- The URM's (formerly SCAs) may pose a risk to human health and the environment.

#### **Step 2. Decisions**

- Use the observational approach to excavate the contaminated material and remove to a licensed landfill.
- Material will be screened to determine if it needs to be removed.

#### **Step 3. Decision Inputs**

- Walkover survey for surface radiation to establish areas for radiological posting, geophysical surveys, and potential subsurface contamination.
- No surface sampling is required.

#### **Step 4. Study Boundaries**

- The footprint of the marked URM and the soils directly beneath.

#### **Step 5. Decision Rule(s)**

- Using the observational approach, if contaminants of concern exceed MTCA Method C, 15 mrem/yr above background exposure, or other risk-based concentrations, then continue excavation.

#### **Conclusions:**

Perform a radiological survey, followed by a geophysical survey in selected areas. Document the field work in the LFI report. Further work will be performed following an observational approach to removal after issuance of the IROD.

#### **4.18 GROUP 18 600-23 (PIT NEAR WYE BARRICADE)**

##### **Summary of Data:**

A portion of this active gravel/borrow pit may have received construction debris that includes barrels and possibly test equipment piping from 1706KE. Asbestos may also be present as lagging around the piping. Radiological contamination may be associated with some of the waste materials.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Depth to groundwater and data from downgradient wells such as 699-15-5A and 699-15-5B
2. Results of conversations with site personnel regarding the history and content of the materials placed in the site. This included several health physics technicians and a heavy equipment operator
3. Baseline cost estimates for removal of the projected waste volume at this site.

#### **Discussion:**

##### **Step 1. Problem Statement**

- Possible risks at this site are liquids from drums migrating to the groundwater, exposure to asbestos if the area is disturbed, and possible radiological contamination from test loops from 1706KE. Test loops included piping, pumps, valves, equipment, instruments, and lagging (asbestos insulation). The asbestos would likely be mixed in and around the piping.
  - Leaving the drums in place may pose a risk to groundwater.
  - Removing asbestos from burial ground may pose a risk to workers.

##### **Step 2. Decisions**

- Does material in the burial grounds exceed action levels?

### **Step 3. Decision Inputs**

- Groundwater depth and analytical data from downgradient wells
- Further historical information
- Calculation of total fill material covering the construction debris
- No geophysical survey is required.

### **Step 4. Study Boundaries**

- The footprint of the removed material from the western end of the gravel pit defines the boundary of the site and can be determined visually.

### **Step 5. Decision Rule(s)**

- Using the observational approach, if the soil below the excavated material exceed MTCA Method B or 15 mrem/yr above background (using an unrestricted scenario) for the contaminants of concern, then excavation will continue.

### **Conclusions:**

The 600-23 waste site will follow an observational approach to removal after issuance of the IROD.

## **4.19 GROUP 19 400-1 (DUMP AREA NEAR 400 AREA)**

### **Summary of Data:**

Construction related debris exists outside the northeastern corner of the 400 Area fenceline. It is doubtful that any chemical or radiological hazard is associated with this site, whose land-use is assumed to be industrial.

Other information provided during the DQO discussions relative to this waste site included the following:

1. Results of conversations with 400 Area Regulatory Compliance staff and individuals from ICFKH Site Planning regarding the usage of the area in question
2. A listing of 31 gravel pits on the Hanford Site that may have potentially been used for disposal of construction-related debris
3. A pictorial aerial history of the development of the 400 Area.

### **Discussion:**

It was agreed that this site is a landlord issue and will be removed from the scope of work in the work plan.

### **Conclusions:**

No further action is required.

#### **4.20 GROUP 20 400 AREA RETIRED SANITARY POND**

##### **Summary of Data:**

The 400 Area Retired Sanitary Pond is an inactive, nonhazardous and nonradioactive liquid waste disposal site that operated from 1972 to 1979. It received approximately 12,000 gal of aqueous wastes from a portable sanitary sewage treatment plant every day of its operation during the construction phase of 400 Area facilities.

##### **Discussion:**

There is not a problem at this site and it will be removed from the 300-FF-2 work scope. This was a sanitary pond, containing no radioactive or CERCLA wastes. The regulators agreed that this site could be deleted and/or deferred to 400 Area D&D.

##### **Conclusions:**

No further action is required.

#### **4.21 GROUP 21 UNDOCUMENTED WASTE SITE, 400 AREA SEPTIC TANK OR CISTERN**

##### **Summary of Data:**

A concrete pipe emerges from the ground approximately 20 ft north of the 400 Area Material Dumping and Building Foundation site. The pipe has an inside diameter of 2 ft and is loosely covered with a weathered wooden manhole cover. The concrete pipe appears to drop approximately 15 ft into a concrete or concrete-lined circular vault that may have been a septic tank or cistern used during the 400 Area construction boom.

##### **Discussion:**

##### **Step 1. Problem Statement**

- There is some question as to the contents and the status of the site. The site may pose a risk if the contents of the tank have not been properly managed.
- Identify whether this site poses a chemical or radiological risk.

##### **Step 2. Decisions**

- Does this site pose a chemical or radiological risk?

##### **Step 3. Decision Inputs**

- Visual inspection and sampling to determine contents
- Survey with a P-11 probe to determine constituents of tank.

#### **Step 4. Study Boundaries**

- The cistern location and any contaminated surrounding soil defines the boundary.

#### **Step 5. Decision Rule(s)**

- If visual inspection finds sludge, then contents will be removed and tested for metals and gross beta.
- If radioactive, then revisit the issue to manage radioactive contents appropriately.

#### **Conclusions:**

Inspect the tank for sludge and/or debris. Conduct a radiological survey of the exposed surfaces of the tank above ground and of the accessible inside surfaces. Sample the contents of the tank for metals and gross beta. Document the evaluation in the LFI report.

#### **4.22 GROUP 22 400 AREA CONCRETE BATCH PLANT, 400 AREA MATERIAL DUMPING AND BUILDING FOUNDATION, 400 AREA CONSTRUCTION MATERIAL DUMPING AREA, 400 AREA BURN PIT, 400 AREA WASTE DUMPING AREA**

#### **Summary of Data:**

DeFord et al. (1994) provides a description of each of these construction debris related sites. Each appears to have been related to construction related activities associated with the 400 Area.

#### **Discussion:**

The decision makers concurred on the following criteria to be used to retain surface sites in the scope of the work plan:

- Each site must be inactive.
- A survey for radioactivity will be performed on each inactive site unless existing information indicates that the site was nonradioactive:
  - If field screening classifies a site as a SCA, it will be retained in the work plan and further investigation will be conducted to determine risk.
  - If a site is not classified as a SCA, it becomes a landlord issue, it is not a CERCLA site, and is removed from the scope of the work plan.

According to these criteria, it was agreed that these sites are to be removed from the scope of the work plan.

#### **Conclusions:**

No further action required.

#### **4.23 GROUP 23 UNDOCUMENTED WASTE SITE, 400 AREA SUSPECTED BURIAL GROUND**

##### **Summary of Data:**

This undocumented site appears to be a Fast Flux Test Facility (FFTF) construction-related site. It is inferred to be nonradioactive since it is related to pre-startup of FFTF. Indications from FFTF personnel are that the site is inactive. It is located adjacent to another undocumented site, the 400 Area Waste Dumping Site, both of which were observed to contain items such as gloves, electrical cable, buckets, glass jars, wood scraps, etc., indicative of construction debris.

##### **Discussion:**

The decision makers concurred on the following criteria to be used to retain surface sites in the scope of the work plan:

- Each site must be inactive.
- A survey for radioactivity will be performed on each inactive site unless existing information indicates that the site was nonradioactive:
  - If field screening classifies a site as a SCA, it will be retained in the work plan and further investigation will be conducted to determine risk.
  - If a site is not classified as a SCA, it becomes a landlord issue, it is not a CERCLA site, and is removed from the scope of the work plan.

##### **Step 1. Problem Statement**

- The site may pose a radiological risk to human health and the environment.

##### **Step 2. Decisions**

- Can this site be removed from the scope of work or does the site require remediation?

##### **Step 3. Decision Inputs**

- Perform a radiation survey.

##### **Step 4. Study Boundaries**

- The footprint of the burial ground and the soil directly beneath.

##### **Step 5. Decision Rule(s)**

- If the radiation levels are below the requirements for designating an SCA, this site will be deleted from the scope of work in the work plan.

##### **Conclusions:**

The decision makers agreed that a radiation survey be performed in accordance with the requirements of Section 222 of the *Hanford Site Radiological Control Manual* (HSRCM-1 1994) to determine if posting as a soil contamination site (SCA) is required. If the site is not classified as a SCA, then it becomes a landlord issue, and it will be removed from the scope of the work plan. Document the survey results in the LFI report.

#### **4.24 GROUP 24 300 AREA SOUTH**

##### **Summary of Data:**

The location and areal extent encompasses Stevens Drive on the west, Horn Rapids Road on the south, the Columbia River on the east, and the southern 300 Area fenceline on the north. This includes the area around the 300-1 waste site which was previously characterized in 1991 prior to the initial groundbreaking activities at the first Environmental Molecular Science Laboratory (EMSL) site location.

##### **Discussion:**

A new group was added to the 300-FF-2 Operable Unit, the 300 Area South. A discussion of the boundaries for the 300 Area South ensued. An RL action is to determine the current strategy concerning land use for this area.

It was later agreed to leave this area in the operable unit and to declare it an area that requires no further action. Further it was agreed that the 300-FF-2 Operable Unit boundary line in the 300 Area would be changed to follow the current 300 Area south fenceline. This also included showing waste site 300-1 as a distinct point south of the 300 Area.

##### **Conclusions:**

The DQO process was not required for making decisions regarding this site. No further action is required.



## 5.0 CONCLUSIONS

In many instances, a wide range of options and/or discussions took place regarding each waste site grouping. The information presented in Table 5-1 summarizes the conclusions and final decisions reached for the 24 waste site groupings discussed during the 300-FF-2 DQO process sessions.

After the last DQO session was held on August 29, 1995, a revised version of the work plan was produced to incorporate the results of the DQO process. This version was provided to RL and the regulators for an informal review. At comment resolution meetings that followed during September and October 1995, a proposal was made to eliminate the need for finalization of the work plan. This proposal was based on the fact that much of the original scope of the work plan presented in the Draft A version (DOE-RL 1994) had changed. During the period of time over which the DQO discussions were held, most of the remaining work scope had been completed after receiving approval from the regulators to proceed. It was agreed that the DQO summary report and the LFI report would be sufficient to document the decisions that had been made during the DQO process and to report the results of the investigations that had been performed. A Tri-Party Agreement Change Control Form was used to document this change and eliminate the need for finalization of the work plan and the subsequent public review.

Table 5-1. Summary of 300-FF-2 DQO Decisions. (2 sheets)

Group	Waste Site Description	Action to be Taken
1	Ashe Substation Oil/Water Separator and Dry Well	No action required at this time.
2	307 Trenches	Sufficient data exist from 300-FF-1 investigations; no QRA is required; document review of data in LFI report.
3	618-10/618-11 Burial Grounds and Associated UPRs	Install one groundwater well at 618-11 and sample at both areas semiannually for 1 year; evaluate data as part of the LFI report.
4	618-1,-2,-3 Burial Grounds, UPR-300-14, 303-M Uranium Oxide Facility, 303-M Storage Area	618-2 and 618-3 will be observational approach to removal after IROD; 618-1 Burial Ground, UPR-300-14, 303-M Uranium Oxide Facility, and 303-M Storage Area will be addressed in conjunction with 300 Area D&D activities.
5	618-7 Burial Ground	618-7 will be observational approach to removal after IROD.
6	UPR-600-22 (Windrow Site)	To be included with remedial action decisions for the 618-11 Burial Ground.
7	618-13 Burial Ground	618-13 will be observational approach to removal after IROD.
8	Undocumented Solid Waste Burial Ground (near 618-8), Solid Waste Burial Ground (Early Burial Ground), 618-8 Burial Ground	No further action at Early Burial Ground; others to be addressed in conjunction with 300 Area D&D activities.
9	316-4 Crib	316-4 will be observational approach to removal after IROD; groundwater sampling is the same as that for the 618-10 Burial Ground.
10	UPR-300-1 (340 Complex)	Geophysical survey, well evaluation, abandon or transfer to another user.
11	Aluminum Recycle Staging Area, Burial Ground West of the Process Trenches	DOE to handle as a landlord activity; results of investigation and/or removal to be included in the LFI report.
12	600-22 (UFO Site)	Take 4 soil samples for herbicides, gross alpha, and gross beta.

Table 5-1. Summary of 300-FF-2 DQO Decisions. (2 sheets)

Group	Waste Site Description	Action to be Taken
13	618-6 Burial Ground, 300 Area RLWS & 340 Building. Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System, 307 Retention Basins	To be addressed in conjunction with 300 Area D&D activities.
14	Cutup Oil Dump Site	Remove discolored soil and surface debris as a landlord activity; document completion in the LFI report.
15	618-9 Burial Ground	No further action required.
16	600-1, JA Jones #1, UPR-600-11	Address all three sites together via observational approach to removal after IROD.
17	600-47 (Debris north of 300 Area)	Rad survey, followed by geophysical survey in selected areas, followed by observational approach to removal after IROD. Document field work in the LFI report.
18	600-23 (pit near Wye Barricade)	600-23 will be observational approach to removal after IROD.
19	400-1 (Dump area near 400 area)	No CERCLA action required.
20	400 Area Retired Sanitary Pond	No CERCLA action required.
21	Undocumented Waste Site, 400 Area Septic Tank/Cistern	Visual and rad survey, sample for metals and gross beta. Document evaluation in the LFI report.
22	400 Area Undocumented Sites includ. 400 Area Concrete Batch Plant, 400 Area Material Dumping and Building. Foundation, 400 Area Construction Material Dumping Area, 400 Area Burn Pit, 400 Area Waste Dumping Area	No CERCLA action required.
23	400 Area Suspected Burial Ground	Perform a rad survey to determine if this site can be removed from work plan scope and document in the LFI report.
24	300 Area South	No CERCLA action required.



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**APPENDIX A**

**300-FF-2 DQO PROCESS MEETING MINUTES AND AGREEMENTS**





## APPENDIX A

### 300-FF-2 DQO PROCESS MEETING MINUTES AND AGREEMENTS

#### Chronology of the 300-FF-2 Work Plan Development (after delivery for Regulator review)

11/21/94	Document provided to regulators to meet Tri-Party Agreement Milestone M-13-08
12/12/94	Letter from DOE to BHI re. implementation of DQO process
1/06/95	Letter from BHI Mgmt to staff re. implementation of DQO process
2/03/95	Comments received from EPA, including Ecology comments
2/16/95	Draft dispositions provided ccmail to regulators
2/17/95	Comment disposition meeting held w/ regulators
3/01/95	First DQO meeting attempted w/ regulators
3/03/95	ccmail from DOE received re. reprioritization of sites
3/10/95	DOE provided verbal direction to proceed with reprioritization
3/16/95	BHI memo provided to DOE with re-evaluation of sites
3/22/95	Meeting w/ regulators to discuss work plan scope recommendations
4/05/95	Meeting w/ regulators to discuss global issues
4/10/95	Internal BHI DQO review meeting
4/11/95	DQO Session #1
4/17/95	DQO Session #2
4/19/95	DQO Session #3
4/25/95	DQO Session #4
5/02/95	DQO Session #5
5/03/95	DQO Session #6
5/09/95	DQO Session #7
5/10/95	DQO Session #8
5/17/95	DQO Session #9
5/24/95	DQO Session #10
5/31/95	DQO Session #11
6/07/95	DQO Session #12
6/08/95	DQO Session #13
6/29/95	DQO Session #14
7/07/95	DQO Session #15
7/13/95	DQO Session #16
8/16/95	DQO Session #17
8/29/95	DQO Session #18 - The last
9/01/95	Delivered draft chapters 1 - 6 to regulators for review
9/26/95	Comment resolution meeting #1
9/28/95	Comment resolution meeting #2 (Cancel the work plan & go to LFI)
10/25/95	Comment resolution meeting #3 (Discuss the LFI and DQO Summary)
12/5/95	Comment resolution meeting #4 (Discuss the DQO Summary)

# MEETING MINUTES

SUBJECT: 300-FF-2 Work Plan Scope Recommendations

TO: Those Listed		BUILDING See below		
FROM: L.C. Hulstrom		CHAIRMAN R. G. McLeod		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA 2440Stv	SHIFT Day	DATE OF MEETING 3/22/95	NUMBER ATTENDING 8

## Attendees:

D.R. Einar            B5-01  
L.C. Hulstrom        H6-05  
K. Kimmel            B1-42  
K.D. Lyso            H6-04  
R.G. McLeod          H4-83  
J.A. Sheriff          B1-42  
P.R. Staats          B5-01  
G.E. VanSickle       H6-05

## CC:

D.M. Wanek            H4-83

The purpose of the meeting was to discuss the 300-FF-2 Work Plan Scope Recommendations that were presented to DOE at their request via Bechtel memo (CCN #010773). The attached tables grouped each waste site into Table 1 -sites recommended for inclusion in the LFI, or Table 2 - sites to be addressed by an alternative process.

In general it was agreed that sites listed in Table 2, those associated with the 300 and 400 Area complexes, would be addressed by other means. These include RCRA TSDs, O&D activities, UST program, and Liquid Effluents program sites. The regulators requested that DOE insure that these other programs are notified that they will have responsibility for these sites. DOE agreed to explore the means necessary to insure that this will happen.

It was noted that five of the sites previously within the high priority category have now been moved to Table 2. In addition, four new sites recently identified from the WIDS database have been added and placed in appropriate categories. Several sites raised questions regarding placement category. Sites such as 303-M, which was transferred from RCRA to CERCLA, the 309 ion exchange pit and vault, and the 333 East Side Heat Treat Salt Storage Area which lies within close proximity to the 618-1 Burial Ground may require further discussion. In addition, sites such as the 300 Area ISV site and the Grout Lysimeter facility currently being run by PNL were discussed as active facilities which may be remediated by PNL.

With regard to the french drain sites in the 400 Area it was questioned whether or not the sites covered by the Liquid Effluents Program need to be included in the work plan. It was also noted that there are a number of french drains within the 300 Area that have not been included in either the work plan or the 300-FF-2 Technical Baseline Report. This discrepancy needs to be addressed in some manner.

Based on these discussions it was generally concluded that the sites identified in Table 1 would be the sites to be included in the LFI. These included the newly identified sites presented in Table 1c. Some of the sites from Table 2 that were discussed may be moved to Table 1 if DQO discussions conclude this is appropriate.

The meeting concluded with a discussion regarding the schedule for the next meeting. This meeting would be to discuss general topics such as land use and burial ground assumptions that are key decisions that must be made prior to initiating the formal DQO

## MEETING MINUTES (Continued)

process. The DQO discussions would be initiated as soon as a facilitator is identified. A facilitator will be made available and the process to be followed has been identified. The general topics meeting is tentatively scheduled for sometime after March 29.

Specific items requiring resolution in the near future include: 1) Should the 303-M Uranium Oxide Facility be moved from Table 2a to Table 1c to be included in the LFI? DOE accepts this suggestion but notes that any actions would then be tied together with the DQOs for the 618-1 burial ground. It was also noted that the 618-1 burial ground is considered an analogous site with the 618-2 burial ground where characterization activities will take place. 2) If the 400 Area french drains that are to be addressed by the Liquid Effluents Program are included in the work plan should the 300 Area french drains also be specifically called out? DOE favors adding a single line waste site to address the approximately 140 300 Area french drains and place it in the D&D category of Table 2a.

These changes, once acknowledged by EPA and Ecology unit managers, will be incorporated into the work plan. Both Tables 1 and 2 will be incorporated into the text of the work plan and the discussions relative to characterization activities will be modified to address Table 1 sites. Upcoming DQO discussions will be utilized to refine the work scope to be included for each of the Table 1 sites. Acceptance of these meeting minutes also signifies approval to begin modification of the work plan.

**FOOTNOTE:** Subsequent to the March 22 meeting some slight modifications to Tables 1 and 2 were identified. Table 3 which is attached as an errata page provides an additional seven waste sites that were not included in the original tables 1 and 2 along with several other proposed minor corrections. Explanation for some of the sites is provided on the errata page. This page is provided for information and completeness, and it is proposed that these sites/corrections be merged into the original listing of sites in the tables as suggested on the errata sheet.

**Table 1a: High Priority Sites Currently Included in the LFI**

300-FF-2 Operable Unit Waste Site		Recommendation	Rationale*
<b>Process Effluent Facilities</b>			
307 Retention Basins	(p3-46)	Proceed with IRM path to QRA in the LFI report	Sufficient information exists from the 300-FF-1 investigation to fulfill 300-FF-2 needs
316-3 (307 Trenches)	(p3-67)	Proceed with IRM path to QRA in the LFI report	Sufficient information exists from the 300-FF-1 investigation to fulfill 300-FF-2 needs
<b>Other Facilities</b>			
H.J. Ashe Substation Oil/Water Separator and Dry Well, (BPA SWMU #13)	(p3-123)	Implement EPA RCRA Facility Assessment as proposed in Section 4.2.3.2.1 of the Work Plan	Possible contamination in a drywell from the separator and surface runoff
<b>Burial Grounds and Associated UPRs</b>			
618-1 Burial Ground	(p6-7)	Investigate 618-2 during the LFI as proposed in the Work Plan	618-1, 618-2, 618-3, 618-8 considered analagous sites
618-2 Burial Ground	(p6-9)	Investigate 618-2 during the LFI as proposed in the Work Plan	618-1, 618-2, 618-3, 618-8 considered analagous sites
618-3 Burial Ground	(p6-10)	Investigate 618-2 during the LFI as proposed in the Work Plan	618-1, 618-2, 618-3, 618-8 considered analagous sites
618-7 Burial Ground	(p6-14)	Investigate as part of the LFI as proposed in the Work Plan	Possible Solvent drums and pyrophoric material make this site unique
618-8 Burial Ground	(p6-17)	Investigate 618-2 during the LFI as proposed in the Work Plan	618-1, 618-2, 618-3, 618-8 considered analagous sites
618-10 Burial Ground	(p6-25)	Investigate 618-10 during the LFI through the Treatability Test Plan	618-10 & 618-11 considered analagous sites
618-11 Burial Ground	(p6-27)	Investigate 618-10 during the LFI through the Treatability Test Plan	618-10 & 618-11 considered analagous sites
UPR-600-1 (618-10)	(p5-20)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-2 (618-10)	(p5-21)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation

300-FF-2 Operable Unit Waste Site		Recommendation	Rationale <sup>a</sup>
UPR-600-3 (618-10)	(p5-21)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-4 (618-11)	(p5-22)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-5 (618-11)	(p5-22)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-6 (618-11)	(p5-23)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-7 (618-11)	(p5-23)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-8 (618-11)	(p5-23)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-9 (618-11)	(p5-24)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
UPR-600-10 (618-11)	(p5-24)	Scope of burial ground investigation during the LFI is adequate to address the UPR	Occurred within or near the burial ground during operation
600-21 (WPPSS Windrow Site)	(p6-2)	Address as part of the LFI per the scope presented in the Work Plan	Insufficient data exists to document the release that occurred as a result of 618-11 operations
618-13 Burial Ground	(p6-31)	Address as part of the LFI per the scope presented in the Work Plan	Uncertainty exists as to the type of disposed waste
Burial Trench West of the Process Trenches	(p3-116)	Address as part of the LFI per the scope presented in the Work Plan	Uncertainty exists as to the type of disposed waste
Undocumented Solid Waste Burial Ground	(p3-99)	Address as part of the LFI per the scope presented in the Work Plan	Uncertainty exists as to the type of disposed waste
Solid Waste Burial Ground (Early Burial Ground)	(p3-100)	Address as part of the LFI per the scope presented in the Work Plan	Uncertainty exists as to the type of disposed waste
<b>Process Effluent Facilities</b>			
316-4 Crib (near the 618-10 BG)	(p3-69)	Investigate and/or remediate as part of the LFI per the scope presented in the Work Plan	Radioactive liquid waste disposal site

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>Unplanned Releases</b>		
UPR-300-1 (Near 340 Bldg) (p5-1)	Address as part of the LFI per the scope presented in the Work Plan	Leak investigated, some soils were removed, well 399-3-8 installed but now covered over
Aluminum Recycle Staging Area (p3-125)	Investigate depth of contamination and develop a plan for remediation as per the Work Plan	Slightly contaminated metal shavings are spread throughout a large area
<b>Other Facilities</b>		
600-22 (UFO Landing Site) (p6-4)	Address as part of the LFI per the scope presented in the Work Plan	Possible undetonated ordnance
<sup>a</sup> Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.		

**Table 1b: Low Priority Sites Currently Included in the LFI**

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>Burial Grounds</b>		
618-6 Burial Ground (p6-12)	Proceed with additional data review (Section 4.2.3.3.1.)	Information required to confirm burial ground moves and locations.
<b>Process Effluent Facilities</b>		
300 Area RLWS and 340 Bldg. Complex (p3-21)	Proceed with data compilation and review, and assembly of drawings (Section 4.2.3.3.2). Remediation to be addressed during D&D activities.	To assess system integrity and facilitate future remedial alternative evaluation and design.
Process Sewer System (p3-8)	Proceed with data compilation and review, and assembly of drawings (Section 4.2.3.3.2). Remediation to be addressed during D&D activities.	To assess system integrity and facilitate future remedial alternative evaluation and design.
300 Area Retired RLWS (p3-26)	Proceed with data compilation and review, and assembly of drawings (Section 4.2.3.3.2). Remediation to be addressed during D&D activities.	To assess system integrity and facilitate future remedial alternative evaluation and design.
<b>Sanitary Sewerage System Facilities</b>		
300 Area Sanitary Sewer System (p3-18)	Proceed with data compilation and review, and assembly of drawings (Section 4.2.3.3.2). Remediation to be addressed during D&D activities.	To assess system integrity and facilitate future remedial alternative evaluation and design.
<b>Other Facilities</b>		
600-46, (Cutup Oil Dump Site) (p3-125)	Characterize and/or remediate during the LFI per Section 4.2.3.3.3.	Contamination is limited, near the river, and easily addressed.
<sup>a</sup> Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.		

**Table 1c: Additional Low Priority Sites for Consideration in the LFI**

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>Burial Grounds</b>		
618-9 Burial Ground (p6-18)	No action required.	Remediation completed via the ERA performed at this site.
<b>Sanitary Sewerage System Facilities</b>		
400 Area Retired Sanitary Pond (p4-72)	Investigate during the LFI to determine if any actions are required.	Misc. sanitary wastewater discharge to ground, retired and backfilled in 1979
Undocumented Waste Site, 400 Area Septic Tank or Cistern (p4-111)	Investigate and/or remediate during the LFI.	Inactive sanitary wastewater discharge
<b>Other Facilities</b>		
600-1 (JA Jones #1) (p6-1)	Investigate and/or remediate during the LFI.	inactive site, received 200 gal. of paint and misc. construction debris
600-23 (Pit) (p6-7)	Investigate and/or remediate during the LFI.	misc. debris incl. barrels, asbestos, and possibly rad. test equipment from 1706KE
600-47 (Debris N of 300 Area) (New Site from WIDS)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris
400-1 (dump area) (p4-79)	Investigate and/or remediate during the LFI.	Possibly active site, contains misc. construction debris
Undocumented Waste Site, 400 Area Concrete Batch Plant (p4-104)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris
Undocumented Waste Site, 400 Area Material Dumping and Building Foundation (p4-108)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris
Undocumented Waste Site, 400 Area Construction Material Dumping Area (p4-104)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris
Undocumented Waste Site, 400 Area Burn Pit (p4-103)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris



300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
Undocumented Waste Site, 400 Area Suspected Burial Ground (p4-112)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris; has appearance of possible burial ground
Undocumented Waste Site, 400 Area Waste Dumping Site (p4-113)	Investigate and/or remediate during the LFI.	Inactive site, contains misc. construction debris
<b>Unplanned Releases</b>		
UPR-600-11 - 1980 discovery at 600-1 (JA Jones #1) (p5-25)	Address with 600-1	discovery of rad. contamination in soils
UPR-300-14 (1975 leak at the 334 Tank Farm) (p5-10)	Address during 618-1 burial ground remediation	acid went to neutralization pit in 618-1 Burial Ground
<sup>a</sup> Further details can be found in the 300-FF-2 OU Technical Baseline Report (BFI-00012). Page number references are provided next to the waste site name. (New Site from WIDS) - additional site(s) recently identified in the WIDS database.		

Table 2a: Sites Associated with the 300 Area Complex

300-FF-2 Operable Unit Waste Site		Recommendation	Rationale <sup>a</sup>
<b>RCRA TSD Units</b>			
300 Area Solvent Evaporator	(p3-27)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
303-K Contaminated Waste Storage	(p3-34)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
304 Concretion Facility	(p3-41)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
304 Storage Area	(p3-45)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
305-B Storage Facility	(p3-45)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
311-TK-40	(p3-57)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
311-TK-50	(p3-58)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
313 Centrifuge	(p3-63)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
313 Filter Press	(p3-63)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
313-TK-2 Waste Acid Neutralization Tank	(p3-65)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
324 Sodium Removal Pilot Plant	(p3-76)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
325 Waste Treatment Facility	(p3-76)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
333 Chromium Tanks 1 and 2 (333-TK-7 and -11)	(p3-80)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
334-A-TK-B & -C	(p3-83 - 3-85)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit

300-FE-2 Operable Unit Waste Site		Recommendation	Rationale <sup>a</sup>
3718-F Alkali Metal Treatment Facility	(p3-92)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
3718-F Burn Shed	(p3-90)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
3718-F Treatment Tanks 1 & 2	(p3-93)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
Biological Treatment Test Facilities	(p3-94)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
Physical and Chemical Treat. Test Facilities	(p3-95)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
Thermal Treatment Test Facilities	(p3-96)	To be addressed by RCRA and/or during D&D	RCRA TSD Unit covered under the site wide Part A permit
<b>Decontamination and Decommissioning Activities</b>			
<b>Process Effluent Facilities</b>			
300 Area RLWS and 340 Bldg. Complex	(p3-21)	Remediation to be addressed during 300 Area D&D activities.	Active systems still supporting 300 Area facilities or functions
Process Sewer System	(p3-8)	Remediation to be addressed during 300 Area D&D activities.	Active systems still supporting 300 Area facilities or functions
300 Area Retired RLWS	(p3-26)	Remediation to be addressed during 300 Area D&D activities.	Underlies active systems still supporting 300 Area facilities or functions
<b>Sanitary Sewerage System Facilities</b>			
300 Area Sanitary Sewer System	(p3-18)	Remediation to be addressed during 300 Area D&D activities.	Active systems still supporting 300 Area facilities or functions
315 Retired Sanitary Drain Field	(p3-67)	Remediation, if required, to be addressed during 300 Area D&D activities.	Inactive septic tank and drain field located adjacent to 315 Water Filter Plant
331 LSL Drain Field	(p3-77)	Remediation, if required, to be addressed during 300 Area D&D activities.	Inactive drain field located east of 331 bldg
331 LSL Trenches 1	(p3-77)	Remediation, if required, to be addressed during 300 Area D&D activities.	Inactive trench partially removed during construction of 331 bldg

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
331 LSL Trenches 2 (p3-77)	Remediation, if required, to be addressed during 300 Area D&D activities.	Inactive trench located near the 331 bldg
335 & 336 Retired Sanitary Drain Fields (p3-86)	Remediation, if required, to be addressed during 300 Area D&D activities.	Inactive septic tank and drain field located under the 335 bldg parking lot
Undocumented Waste Site, 350 Bldg Sanitary Sewer Lift Station (p3-106)	No action required.	1993 occurrence report concerning latex paint release to the sanitary sewer
<b>Unplanned Releases</b>		
UPR-300-2 (1954 spill at the 340 Bldg) (p5-1)	Address during bldg D&D activities	Spill to soil in vicinity of bldg
UPR-300-4 (Beneath and South of 321 bldg) (From III P) (p5-2)	Address during bldg D&D activities	Extensive uranyl nitrate found around and under the bldg
UPR-300-5 (1973 spill at the 309 Bldg) (p5-2)	Address during bldg D&D activities	Spill to soil in vicinity of bldg
UPR-300-7 (1972 fuel oil spill at the 384 Bldg) (p5-8)	Address during bldg D&D activities	Spill to soils near bldg and storage tanks
UPR-300-10 (1977 RLWS release under the 325 Bldg) (p5-8)	Address during bldg D&D activities	Leak in RLWS lines beneath the 325 Bldg.
UPR-300-11 (1977 RLWS release near the 340 Bldg) (p5-8)	Address during bldg D&D activities	Leak in RLWS lines near the 340 bldg.
UPR-300-12 (1977 spill in basement of 325 Bldg) (p5-9)	Address during bldg D&D activities	Spill to floor with seepage to soils under the bldg
UPR-300-13 (1973 leak from tank under 334A Bldg) (p5-10)	Address during bldg D&D activities	Original tank removed, site now under 334A Bldg
UPR-300-15 (1980 release to process sewer from 313 Bldg) (New site from WIDS)	Address during sewer system and/or bldg D&D activities	discharge to process sewer only
UPR-300-17 (1979 U fines fire at 333 Bldg) (p5-14)	Address during bldg D&D activities	contaminated area adjacent to 333 bldg
UPR-300-18 (1962 minor release at 321 Tank Farm) (p5-14)	no action required	release limited to employee clothing
UPR-300-38 (early 1970's leak under 333 Bldg) (p5-14)	Address during bldg D&D activities	leak was under the floor in the building

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
UPR-300-39 (1954 release at 311 Tank Farm) (p5-15)	Address during tank D&D activities	contamination in soils around the tanks
UPR-300-40 (Pipe trench between 311 Tank Farm & 303-F bldg) (From III P) (p5-16)	Address during tank farm remediation or bldg D&D activities	Acids with uranium in solution leaked to soils surrounding the pipe trench
UPR-300-41 (1986 release 15 ft W of 340 Bldg) (p5-17)	Address during bldg D&D activities if required	remediation performed at the time of the release
UPR-300-42 (1983 release at the Powerhouse) (p5-17)	no action required	fuel oil spill was confined, soaked up, and removed
UPR-300-43 (1986 release of solvent refined coal at 329 bldg) (p5-18)	no action required	discolored soils were removed
UPR-300-44 (1985 discovery of 313 Bldg Process Sewer leak) (p5-18)	Address during bldg D&D activities	sewer line section is under the bldg
UPR-300-45 (1985 release beneath transfer piping east of 303-F Bldg) (p5-18)	Address during bldg and/or tank farm D&D activities	soil removal was completed
UPR-300-46 (1989 discovery north of 333 Bldg) (p5-19)	Address during bldg D&D activities	some soil removal was completed
UPR-300-47, 309 Building Glycol Spill (1993) (p3-106)	no action required	discharge went to the process sewer and 316-5 process trenches
UPR-300-48 (1991 discovery under 325 Bldg) (New Site from WIDS)	Address during bldg D&D activities	Process sewer leak under the bldg, sealed with grout in 1993
Corrosion of Vitrified Clay Sewer Piping (1989 discovery) (p3-100)	Address during Process Sewer remediation activities	process sewer line near 3712 bldg was found corroded away
384 Powerhouse #6 Fuel Oil Spill (1991 spill) (p3-105)	no action required	spill cleanup performed
Other Facilities		
Other Potential Waste Sources	Address on a case by case basis	For other unknown occurrences
300 Area Powerhouse IIWSA (p3-20)	Address by Landlord and/or during bldg D&D activities	storage area still active
300 Area Interim Filter Backwash Disposal (Area W of 300 Area) (p3-20)	no action required	nonhazardous backwash disposal area

300-FF-2 Operable Unit Waste Site		Recommendation	Rationale <sup>a</sup>
300-1 (Auto Maint. Yard)	(p3-34)	no action possibly required at the request of Native Americans	minor oil spill in an area of cultural sensitivity
303-M Uranium Oxide Facility	(p3-40)	Address during bldg D&D or 618-1 Burial Ground remediation	Bldg placed in final standby status in 1987; now awaiting D&D
303-M Storage Area	(p3-39)	no action required	no record or evidence of releases
Undocumented Waste Site, Solid Waste Site Near 303-G Building	(p3-127)	Address during 300 Area D&D activities	subsurface contamination along Ginko St. is related to bldg operations
Undocumented Waste Site, 306-E, 306-W	(p3-115)	Address during bldg D&D activities	contamination located in bldg and surrounding soils
309-TW-1,-2,-3	(p3-51)	Address during bldg D&D activities	tanks are enclosed in an u/g concrete vault
309-WS-1 (IX vault) (From III P)	(p3-51)	Address during bldg D&D activities	Bldg landlord is in process of facility transition to D&D at this time.
309-WS-2 (IX Pit) (From III P)	(p3-54)	Address during bldg D&D activities	Bldg landlord is in process of facility transition to D&D at this time.
309-WS-3 (309 Brine Pit) (New site from WIDS)		Address during bldg D&D activities	backfilled w/sand & gravel
311 Methanol Tanks 1 & 2	(p3-55 - 3-56)	no action required	tanks removed in 1989, no evidence of contamination
313 Copper Remelt Operations	(p3-62)	Address during bldg D&D activities	part of 313 and 305 bldg operations
313 East Side Storage Pad	(p3-62)	Address during bldg D&D activities	active storage area
313 Methanol Tank	(p3-64)	no action required	tank removed in 1989, no evidence of contamination
313 Uranium Recovery Operations	(p3-66)	Address during bldg D&D activities	part of 313 bldg operations
323 Tanks 1,2,3 & 4	(p3-70 - 75)	Address during bldg D&D activities	tanks enclosed in concrete vault under the 323 bldg
331-C HWSA	(p3-78)	Address by Landlord and/or during 331 bldg D&D activities	active storage area near 331 bldg
333 East Side Heat Treat Salt Storage Area	(p3-79)	Address during 333 bldg D&D activities	inactive storage area near 333 bldg and over 618-1 burial ground

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale*
333 East Side HWSA (p3-78)	Address during 333 bldg D&D activities	active storage area near 333 bldg and over 618-1 burial ground
333 Laydown HWSA (p3-79)	Address during 333 bldg D&D activities	inactive storage area near 333 bldg and over 618-1 burial ground
333 West Side Waste Oil Tank (p3-81)	Address during 333 bldg D&D activities	active, nonhaz, nonrad storage tank
334 Tank Farm Waste Acid Storage Tank (p3-81)	Address with 334 Tank Farm D&D activities	tank removed from service in 1986
350 HWSA (p3-86)	Address by Landlord and/or during 350 bldg D&D activities	active storage area near 350 bldg
3712 Uranium Scrap Storage Area (p3-87)	Address during bldg D&D activities	active U storage area
3713 Paint Shop Haz. Waste Satellite Area (p3-89)	Address during bldg D&D activities	misc. wastes related to paint shop
3713 Sign Shop Haz. Waste Satellite Area (p3-90)	Address during bldg D&D activities	misc. wastes related to paint shop
3746-D Silver Recovery (p3-94)	Address during 3746-D/3705 bldg D&D activities	active silver recovery operation from photochemical wastes
300 Area ISV Site (p3-31)	Address during 300 area D&D activities	currently ongoing operations
DOE 351 Substation (300-4) (p3-116)	Address during 300 Area D&D activities	surface & subsurface contamination found at this "active" power station
Undocumented Waste Site, Hanford Grout Lysimeter Facility (p3-106)	Address during D&D activities at this location	D&D is currently being planned
Undocumented Waste Site, 366 and 366A Fuel Oil Bunkers (p3-99)	Address during 366 bldg D&D activities	2 tanks enclosed in an u/g concrete bunker
Undocumented Waste Site, 3705 Photography Building (p3-100)	Address during bldg D&D activities	recently active as photo processing shop
Undocumented Waste Site, 3730 Gamma Neutron Irradiation Facility (p3-100)	Address during bldg D&D activities	large Co-60 source currently used for gamma irradiation testing
Undocumented Waste Site, 325 Lab Diesel Fuel Tank (p3-105)	No action required	Tank removed in 1992, no contamination found

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale*
Undocumented Waste Site, 329 BioPhysics Laboratory (p3-106)	Address during bldg D&D activities	small soil contamination area found outside bldg in 1991
Undocumented Waste Site, 314 Metal Extrusion Building (p3-106)	Address during bldg D&D activities	Soil contamination near bldg related to Fuel Fab. Operations in 313 bldg
Undocumented Waste Site, Solid Waste Site Near 314 Building (p3-127)	Address during 300 Area or 314 bldg D&D activities	yellow cake found on subsurface portion of power pole near bldg
Undocumented Waste Site, 324 Building (p3-107)	Address during bldg D&D activities	possible rad contamination in soils beneath bldg reported
Undocumented Waste Site, 331 Building Animal Waste Tanks and Trench (p3-107)	Address during bldg D&D activities	associated with 331 Bldg operations
Undocumented Waste Site, 333 Building (p3-109)	Address during bldg D&D activities	Other UPRs, associated bldgs, and bldg operational history indicates subsurface contamination exists
<b><u>Underground Storage Tank Program</u></b>		
Undocumented Waste Site, 382 Pump House Underground Storage Tank (p3-104) <b>(From HI P)</b>	No LFI activity required; UST program to remediate 382-1 site; remove from IRM listing	382-1 tank extracted, contamination found; 382-2 & 382-3 tanks removed with no contamination found
Undocumented Waste Site, 3709-A Fire Station (p3-105)	Address through UST program	tanks removed, soil contamination found
<p>*Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.</p> <p>(New Site from WIDS) - additional site(s) recently identified in the WIDS database.</p> <p><b>(From HI P)</b> - site(s) previously placed in the high priority listing to be addressed during the LFI.</p>		



Table 2b: Sites Associated with the 400 Area Complex

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>RCRA TSD Units</b>		
437 Area Maintenance and Storage facility (p4-84)	To be addressed by RCRA and/or during D&D activities	Currently used for other Site projects, will be used during FFTF D&D
4843 FFTF Sodium Storage (Alkali Metal Storage) (p4-97)	To be addressed by RCRA and/or during D&D activities	Currently still active
<b>Decontamination and Decommissioning Activities</b>		
<b>Process Effluent Facilities</b>		
400 Area Process Pond and Sewer System (p4-62)	Address during 400 Area D&D	currently active
4608 Percolation Ponds B and C (p4-69)	Address during 400 Area D&D	currently active
400 Area Sand Bottom Trench (p4-77)	Address during 400 Area D&D	currently active
<b>Unplanned Releases</b>		
UPR-400-1 (1984 spill N of 427 bldg) (p5-19)	Address during 400 Area D&D if action required	Adjacent to the 427 bldg cooling towers
<b>Other Facilities</b>		
Other Potential Waste Sources	Address on a case by case basis	For other unknown occurrences
427 HWSA (p4-82)	Address with 427 Bldg D&D	currently still active
4713-B HWSA (p4-89)	Address with 4713-B Bldg D&D	currently still active
4722 Paint Shop HWSA (p4-92)	Address with 4722 Bldg D&D	currently still active
4831 Laydown HWSA (p4-96)	Address with 4831 Bldg D&D	associated with the 4831 bldg
<b>Sanitary Sewerage System Facilities</b>		
400 Area Retired French Drains (p4-71)	Address during 400 Area D&D	Part of the FFTF complex
400 Area Retired Septic Tanks (p4-73)	Address during 400 Area D&D	Part of the FFTF complex, tanks located near 4702 bldg
4607 Sanitary Sewer (p4-120)	Address during 400 Area D&D	Active system still supporting FFTF complex

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
4607 Sanitary Tile Field (p4-123)	Address during 400 Area D&D if required	Replaced by 4607 Sanitary Sewer Lagoon but still part of the FFTF complex
Undocumented Waste Site, Retired Portable Sanitary Sewage Treatment Plant (p4-117)	No action required	Temporary facility; pipelines were abandoned in place; location was within the FFTF complex
Undocumented Waste Site, 4607 Sanitary Sewer Lagoon (p4-125)	Address during 400 Area D&D	Active system still supporting FFTF complex
Undocumented Waste Site, Underground Sewer Line from FFTF to WPPSS (p4-109)	Address during 400 Area D&D	Tie-line never used; still part of the FFTF complex
Undocumented Waste Site, 4608 Sanitary Sewer (p4-86)	Address during 400 Area D&D	Active system still supporting FFTF complex
Undocumented Waste Site, 4608 Sanitary Tile Drain Field (p4-87)	Address during 400 Area D&D	Active system still supporting FFTF complex
Undocumented 400 Area Storm Drain Outfall Trench (p4-117)	Address during 400 Area D&D	Active stormwater drainage outfall
Undocumented Waste Site, 451-A Substation and B/N Plant French Drain (p4-119)	Address during 400 Area D&D	Part of the FFTF complex
<b><u>Underground Storage Tank Program</u></b>		
Diesel Fuel Tank Fitting Leak (p4-105)	No action required. Addressed through UST program	tanks removed, remediation completed
<b><u>Liquid Effluents Program (WAC-173-216 State Waste Discharge Permit Program or WAC-173-218 Underground Injection Controls Program Permits)</u></b>		
<b>Sanitary Sewerage System Facilities</b>		
400 Area French Drains 1A, 1B, 2,3,4,5,6,7,8,9,10, and 10A (p4-45 - 4-61)	Address via 216/218 Permits	Permit application is in process
403 French Drain (p4-80)	Address via 216/218 Permits	Permit application is in process
4713-B French Drain (p4-88)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, 4713-B Loading Dock French Drain (p4-128)	Address via 216/218 Permits	Permit application is in process

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale*
4721 French Drain (p4-92)	Address via 216/218 Permits	Permit application is in process
4722-B French Drain (p4-93)	Address via 216/218 Permits	Permit application is in process
4722-C French Drain (p4-94)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Altitude Valve Pit T-58 French Drain (p4-102)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Altitude Valve Pit T-87 French Drain (p4-102)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Altitude Valve Pit T-330 French Drain (p4-103)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Well Pump P-14 French Drain (p4-115)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Well Pump P-15 French Drain (p4-116)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, Well Pump P-16 French Drain (p4-116)	Address via 216/218 Permits	Permit application is in process
Undocumented Waste Site, 400 Area French Drain 11 (p4-119)	Address via 216/218 Permits	Permit application is in process
*Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.		

Note: Approximately 140 french drains (i.e. injection wells) in the 300 Area also are covered by the 216/218 permits.

**Table 2c: Other Sites associated with the 300-FF-2 Operable Unit**

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale <sup>a</sup>
<b>Other Facilities</b>		
Benton Switch Substation (p3-117)	Address during site D&D activities	site currently active
H.J. Ashe Substation Switchyard (p3-120)	Address during site D&D activities	site currently active; contains 2 - 360 ft deep grounding wells
H.J. Ashe Substation Storage Area, BPA SWMU #12 (p3-123)	Address during site D&D activities	site currently active
<sup>a</sup> Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.		

**Table 3: Errata Sheet for Additional Sites**

300-FF-2 Operable Unit Waste Site	Recommendation	Rationale*
<b>Table 1c Sites</b>		
JA Jones #1 (p6-1)	Investigate and/or remediate during the LFI w/600-1	inactive site, received 200 gal of paint and misc. construction debris
<b>Table 2a Sites (300 Area)</b>		
300-2 (New site from WIDS)	Remediation, if required, to be addressed during 300 Area D&D activities	release of contaminated light water from 309 bldg to current site of 3763 bldg
340 Complex HWSA (New Site from WIDS)	Address with 340 Bldg Complex D&D activities	active storage near 340 bldg
<b>Table 2b Sites (400 Area)</b>		
4831 Flammable Storage Facility (p4-131)	Address during 400 Area D&D	currently still active
Buried Construction Waste Area Number 1 (p4-128)	Address during 400 Area D&D	under the 4843 Laydown area & 4843 bldg
Buried Construction Waste Area Number 2 (p4-128)	Address during 400 Area D&D	under the 4831 Flammable Storage Facility
440 Hazardous Waste Storage Facility (p4-129)	Address during 400 Area D&D	currently still active
*Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name.		

Notes: The 600-1 and JA Jones #1 sites will be split into 2 sites located at the same general location. The 600-21 WPPSS Windrow Site designation has now been changed to UPR-600-22. UPR-300-15 will be removed from Table 2a since it has been included with 300-FF-1 waste sites. The 4608 Percolation Ponds B & C site from Table 2b will be removed since it is identified in BHI-00012 as part of the 400 Area Process Pond and Sewer System.

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# MEETING MINUTES

BHH-00001

Rev. 0

Subject: 300-FF-2 Work Plan Global Issues Discussion

TO: Those Listed BUILDING See Below

FROM: L.C. Hulstrom CHAIRMAN D.M. Wanek

Department-Operation- Component	Area	Shift	Date of Meeting	Number Attending
ERC/300 Area Project	RCHN	Day	4/05/95	11

## Attendees:

S.C. Adams	H6-03	K.D. Lyso	H6-04
J.W. Day	H4-83	P.R. Staats	B5-01
D.R. Einan	B5-01	S.C. Tindall	H4-86
L.C. Hulstrom	H6-05	G.E. VanSickle	H6-05
G.D. Joyce	S7-73	D.M. Wanek	H4-83
K. Kimmel	B1-42		

cc: R.G. McLeod - H4-83

The purpose of the meeting was to discuss three 300-FF-2 Work Plan issues that required discussion prior to initiation of the Data Quality Objectives process for the operable unit. These issues included land use, burial grounds, and risk assessment. Insufficient time was available at the end of the meeting to discuss risk assessment and it was agreed that this would be discussed at the next meeting.

For the sites previously agreed upon to be included in the LFI at this time the land use assumptions on the attached table were agreed upon. It was further agreed upon that these were assumptions for the purpose of planning the LFI activities and these could be subject to change as the DQO process proceeds and that this was not an attempt to set the overall land use for these sites. Definition of several of the land use terms such as unrestricted, residential, and recreational were discussed and it was agreed that there were some fine points that were not entirely clear to everyone in attendance. Clarification of these terms will be provided during the DQO sessions.

With regard to the burial ground issue the recent letter from EPA regarding burial grounds 618-4 and 618-5 in the 300-FF-1 operable unit was discussed. Also discussed was the subject of whether or not all 300 Area burial grounds had to be excavated. Clarification was requested from EPA on this subject. The range of possible scenarios from excavate and removal to cap and monitor will affect the approach to characterization during the LFI. Further discussion will be held in the near future.

It was agreed that the first of the DQO sessions would be held on Tuesday, April 11 and that an agenda listing the sites to be discussed would be provided prior to the meeting so that participants can utilize the work plan and the 300-FF-2 Technical Baseline Report to prepare for the meeting.

Table 1: Land Use Assumptions for 300-FF-2 Operable Unit Sites included in the LFI

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300-FF-2 Operable Unit Waste Site		Land Use Assumption <sup>2</sup>
<b>Process Effluent Facilities</b>		
307 Retention Basins	(p3-46)	Industrial
316-3 (307 Trenches)	(p3-67)	Industrial
316-4 Crib (near the 618-10 BG)	(p3-69)	Recreational but compare to a range of alternatives
300 Area RLWS and 340 Bldg. Complex	(p3-21)	Industrial
Process Sewer System	(p3-8)	Industrial
300 Area Retired RLWS	(p3-26)	Industrial
<b>Sanitary Sewerage System Facilities</b>		
300 Area Sanitary Sewer System	(p3-18)	Industrial
400 Area Retired Sanitary Pond	(p4-72)	Industrial
Undocumented Waste Site, 400 Area Septic Tank or Cistern	(p4-111)	Industrial
<b>Burial Grounds and Associated UPRs</b>		
618-1 Burial Ground	(p6-7)	Industrial
618-2 Burial Ground	(p6-9)	Industrial
618-3 Burial Ground	(p6-10)	Industrial
618-6 Burial Ground	(p6-12)	Industrial
618-7 Burial Ground	(p6-14)	Industrial
618-8 Burial Ground	(p6-17)	Industrial
618-9 Burial Ground	(p6-18)	Industrial
618-10 Burial Ground	(p6-25)	Recreational but compare to a range of alternatives
618-11 Burial Ground	(p6-27)	Industrial
UPR-600-1 (618-10)	(p5-20)	Recreational but compare to a range of alternatives
UPR-600-2 (618-10)	(p5-21)	Recreational but compare to a range of alternatives
UPR-600-3 (618-10)	(p5-21)	Recreational but compare to a range of alternatives
UPR-600-4 (618-11)	(p5-22)	Industrial
UPR-600-5 (618-11)	(p5-22)	Industrial
UPR-600-6 (618-11)	(p5-23)	Industrial
UPR-600-7 (618-11)	(p5-23)	Industrial

300-FF-2 Operable Unit Waste Site		Land Use Assumption <sup>2</sup>
UPR-600-8 (618-11)	(p5-23)	Industrial
UPR-600-9 (618-11)	(p5-24)	Industrial
UPR-600-10 (618-11)	(p5-24)	Industrial
UPR-600-22 - 600-21 - (WPPSS Windrow Site)	(p6-2)	Industrial
618-13 Burial Ground	(p6-31)	Industrial
Burial Trench West of the Process Trenches	(p3-116)	Industrial
Undocumented Solid Waste Burial Ground	(p3-99)	Industrial
Solid Waste Burial Ground (Early Burial Ground)	(p3-100)	Industrial
<b>Unplanned Releases</b>		
UPR-300-1 (Near 340 Bldg)	(p5-1)	Industrial
Aluminum Recycle Staging Area	(p3-125)	Industrial
UPR-600-11 - 1980 discovery at 600-1 (JA Jones #1)	(p5-25)	Industrial
UPR-300-14 (1975 leak at the 334 Tank Farm)	(p5-10)	Industrial
<b>Other Facilities</b>		
H.J. Ashe Substation Oil/Water Separator and Dry Well, (BPA SWMU #13)	(p3-123)	Industrial
600-1	(p6-1)	Unrestricted
JA Jones #1	(p6-1)	Unrestricted
600-22 (UFO Landing Site)	(p6-4)	Agricultural with comparison to industrial
600-23 (Pit)	(p6-7)	Unrestricted with comparison to recreational
600-46, (Cutup Oil Dump Site)	(p3-125)	Unrestricted
600-47 (Debris N of 300 Area) (New Site from WIDS)		Industrial
400-1 (dump area)	(p4-79)	Industrial
Undocumented Waste Site, 400 Area Concrete Batch Plant	(p4-104)	Industrial
Undocumented Waste Site, 400 Area Material Dumping and Building Foundation	(p4-108)	Industrial
Undocumented Waste Site, 400 Area Construction Material Dumping Area	(p4-104)	Industrial



300-FF-2 Operable Unit Waste Site	Land Use Assumption <sup>2</sup>
Undocumented Waste Site, 400 Area Burn Pit (p4-103)	Industrial
Undocumented Waste Site, 400 Area Suspected Burial Ground (p4-112)	Industrial
Undocumented Waste Site, 400 Area Waste Dumping Site (p4-113)	Industrial
*Further details can be found in the 300-FF-2 OU Technical Baseline Report (BHI-00012). Page number references are provided next to the waste site name. (New Site from WIDS) - additional site(s) recently identified in the WIDS database.	

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

<b>TO:</b> Attendees		<b>BUILDING</b>		
<b>FROM:</b> Kay Kimmel - Dames & Moore		<b>CHAIRMAN</b> Donna M. Wanek		
<b>DEPARTMENT-OPERATION-COMPONENT</b> ERC/300 Area Project	<b>AREA</b> RCHN	<b>SHIFT</b> Day	<b>DATE OF MEETING</b> 04/11/95	<b>NUMBER ATTENDING</b> 11

Attendees:

R.A. Carlson	H6-05	G.D. Joyce	H4-86	S.C. Tindall	H4-86
J.W. Day	H4-83	K. Kimmel	B1-42	G.E. Van Sickle	H6-05
D.R. Einan	B5-01	J.A. Lowe	H4-92	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05	P.R. Staats	B5-18		

cc: R.G. McLeod      H4-83

Attachments:      (1) Agenda  
                               (2) Table 2, 300-FF-2 Waste Sites to be Investigated

The previous 300-FF-2 Operable Unit Work Plan meeting on 04/05/95 began laying the groundwork for further discussions on data quality objectives (DQOs). Clarification was required on one issue which had been postponed until this meeting. That issue concerns risk assessment, and whether to perform a baseline risk assessment (RA) only or to perform both a qualitative risk assessment (QRA) and an RA. There was much discussion in this regard with the consensus to follow the DQO process and make that determination at a logical point within that process.

The next step the group took was to define the RA pathways and specific criteria to be used in the residential (unrestricted), industrial and recreational (occasional) scenarios. These definitions will apply whether the data feed into the RA or the QRA.

Residential Scenario:

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- Ingestion of Game, Fish and Crops
- 30 year duration
- 365 days/year
- 24 hours/day

Industrial Scenario:

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- 20 year duration
- 250 days/year
- 8 hours/day

Recreational Scenario:

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- Ingestion of Game and Fish
- 30 year duration
- \* • 7 days/year
- \* • 8 hours/day

\* The exposure duration parameters were unresolved.

The next topic concerned the 303-M facilities. Ecology directed that the 303-M Uranium Oxide Facility be included in the work plan with RCRA ARARs applied. ACTION ITEM 041195-1 for the ERC team was delegated, to clarify if the 303-M Storage Area should be included with the 303-M Uranium Oxide Facility:

041195-1: If the 303-M Storage Area is active, do not include it in the work plan; however, if it is not active and is not intended to be used, then include it in the work plan.

The DQO process was fully entered in the afternoon session, with the following decisions made concerning Groups 12, 13, 14, and 16.

**GROUP 12**

Site: 600-22 (UFO Landing Site) (pg 6-4)

*Assumption - Agricultural land-use with comparison to Industrial land-use*

**Step 1. State the Problem**

Radiological contamination, unexploded ordnance and herbicide may pose a potential risk to the health and safety of the public or the environment.

**Step 2. Identify the Decision**

- Do herbicide residues exist in high enough levels to pose risk?
- Do ordnance chemical residues exist at high enough levels to pose risk?
- Is there unexploded ordnance?
- Is there any radiological risk posed by this site?

**Step 3. Identify the Inputs to the Decision**

Decision Makers requested the opportunity to review the new ordnance information and the ecological survey.

- Aerial rad survey information must be provided
- Verify herbicide data

**MEETING AGREEMENTS (Continued)****Step 4. Define the Study Boundaries**

The site is approximately .25 square miles in size, one mile west of the 300 Area, and is concerned with the surface only.

**GROUP 13**

Site: 618-6 Burial Ground (pg 6-12), 300 Area RLWS & 340 Bldg Complex (pg 3-21), 300 Area Retired RLWS (pg 3-26), 300 Area Process Sewer System (pg 3-8), 300 Area Sanitary Sewer System (pg 3-18)

*Assumption - Industrial land-use*

**Step 1. State the Problem**

- There is no problem to state on the sewer lines because D&D will remediate the sewer lines. Any CERCLA decisions will be deferred until after D&D.
- Original 618-6 burial ground location is deferred to when the 300 Area buildings are addressed. The burial ground contents were eventually moved to 618-10 and will be considered as part of that site.
- No further action is required for this group (618-6 Burial Ground, 300 Area RLWS & 340 Bldg Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System) because each site will be addressed when the balance of the 300 Area (i.e., when the buildings) will be addressed. The rationale to postpone activity at these waste sites is that changes could occur and a one-time data collection effort is preferred.

**GROUP 14**

Site: Cutup Oil Drum Site (pg 3-125)

*Assumption - Unrestricted land-use*

**Step 1. State the Problem**

This is a housekeeping step, discolored soil will be removed and disposed as appropriate. Additional debris would be disposed appropriately. Remaining soil will be less than MTCA Level A values. Waste will be designated as investigation derived waste (IDW) until appropriately dispositioned.

**GROUP 16**

Site: 600-1 (Pit north of 300 Area) (pg 6-1), JA Jones #1 (Pit north of 300 Area), (pg 6-1), UPR-600-11 (assoc. w/ 600-1 & JA Jones #1) (pg 5-25)

*Assumption - Unrestricted land-use*

**Step 1. State the Problem**

May pose radiological and chemical risk to the public.

## MEETING AGREEMENTS (Continued)

Page 4 of 4

### Step 2. Identify the Decision

- Does radioactive contamination pose a risk to the public or environment?
- Does contamination from discarded paint pose a risk?

### Step 3. Identify the Inputs to the Decision

### Step 4. Define the Study Boundaries

- The berm around the depression defines the boundary of the site.

### Step 5. Develop the Decision Rule

- If radiochemical and chemical contamination do not cause a risk, stabilize the area.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	19 Apr 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	4/17/95
U.S. Department of Energy Donna M. Wanek	<i>Donna M. Wanek</i>	4/19/95

**MEETING AGENDA FOR APRIL 11, 1995**

There will be a meeting on Tuesday, April 11, 1995 beginning at 10 am in room 2100 of 2440 Stevens Ctr. Drive. The room has been scheduled through until 4 pm. We will take a lunch break at 12:00. The agenda for this meeting will be as follows:

Follow-on discussion regarding risk assessment  
Status of 303-M Uranium Oxide Facility  
Introduction of Waste Site Grouping Table  
DQO Process for the following waste sites:

Curup Oil Drum Site

600-22 (UFO Site)

600-1, JA Jones #1, UPR-600-11

600-47

600-23

Discussions regarding 618-6 Burial Ground, 300  
Area RLWS, 340 Complex, 300 Area Retired RLWS,  
300 Area Process Sewer system, 300 Area Sanitary  
Sewer system work scope

With the exception of 600-47, all of these sites and the initial scope proposed have been described in the 300-FF-2 Technical Baseline Report or the 300-FF-2 Work Plan. 600-47 will be described at the meeting. Please come prepared to discuss these sites. If time permits we may attempt to do several additional sites as well. These would include the Aluminum Recycle Staging Area, UPR-300-1, and documentation for the 618-9 burial ground.

TABLE 2

DOE 4/1/95

300-FF-2 Waste Sites to be Investigated

**High Priority**

IRM Pathway

Group 1 Ashe Substation Oil/Water Separator and Dry Well

Group 2 307 Retention Basins, 307 Trenches

LFI Pathway

Burial Grounds & UPR's

Group 3 618-10 & 618-11 Burial Grounds and Associated UPR's (1-10)

Group 4 618-1, 618-2, 618-3, 618-8 Burial Grounds, UPR-300-14 (release near 618-1 BG), 303-M Uranium  
Oxide Facility

Group 5 618-7 Burial Ground

Group 6 UPR-600-22 (600-21 (Windrow Site))

Group 7 618-13 Burial Ground (Mound)

Group 8 Burial Ground West of the Process Trenches, Undoc. Solid Waste  
Burial Ground (near 618-8), Solid Waste Burial Ground (Early BG)

Process Effluent Facilities

Group 9 316-4 Crib

Unplanned Releases

Group 10 UPR-300-1 (340 Complex, 399-3-8)

Group 11 Aluminum Recycle Staging Area

Other Facilities

Group 12 600-22 (UFO Site)

**Low Priority**

Group 13 618-6 Burial Ground, 300 Area RLWS & 340 Bldg. Complex, 300 Area  
Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary  
Sewer System

Group 14 Cutup Oil Drum Site

Group 15 618-9 Burial Ground

Group 16 600-1 (Pit north of 300 Area), JA Jones #1 (Pit north of 300 Area), UPR-600-11 (assoc. w/ 600-1 & JA Jones #1)

Group 17 600-47 (Debris north of 300 Area)

Group 18 600-23 (Pit near Wye Barricade)

Group 19 400-1 (dump area near 400 Area)

Group 20 400 Area Retired Sanitary Pond

Group 21 Undocumented Waste Site, 400 Area Septic Tank or Cistern

Group 22 all of the following sites:

Undocumented Waste Site, 400 Area Concrete Batch Plant

Undocumented Waste Site, 400 Area Material Dumping and Building Foundation

Undocumented Waste Site, 400 Area Construction Material Dumping Area

Undocumented Waste Site, 400 Area Burn Pit

Undocumented Waste Site, 400 Area Suspected Burial Ground

Undocumented Waste Site, 400 Area Waste Dumping Area



# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN: Donna M. Wanek (R.G. McLeod, Acting)		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 04/17/95	NUMBER ATTENDING 9

Attendees:

R.A. Carlson	H6-05	L.C. Hulstrom	H6-05	R.G. McLeod	H4-83
D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
S.K. DeMers	N3-06	K. Kimmel	B1-42	G.E. Van Sickle	H6-05

cc: D.M. Wanek      H4-83

Attachments:      (1) Agenda

- Minutes from the last meeting were discussed and revised. Minutes will be available for signature at the next meeting.
- It was agreed that the DQO process would be documented through the minutes and that the work plan would be modified to reflect the agreements documented in the minutes.

## GROUP 12 (continued from previous session)

UFO Landing Site (600-22 Site):

- The results of a fly-over by EG&G in June 1988 were provided. No radioactivity was detected at the 600-22 site, however, this information did not meet the level of confidence for deciding not to require further field information.
- The results of an ecological survey were provided (BHI-00170 Revision 00). This information did not meet the level of confidence for deciding not to require further field information.
- Two samples and their duplicates will be taken from the scarred area: one from the center and one from the tip of a spoke. The purpose of the samples is to verify the presence or absence of herbicide by analytical methods and radioactivity using gross alpha and gross beta analyses.

### 5. Develop the Decision Rule:

- If gross alpha or gross beta are detected at greater than 15 mrem/year over background, then further information will be collected. Background is as defined in the 300-FF-1 Phase I Remedial Investigation report.
- If herbicides are found above the determined MTCA Level, then further investigation will be required.

## GROUP 18

Site: 600-23 (Pit near Wye Barricade) (pg 6-7 in the 300-FF-2 Technical Baseline Report)

*Assumptions - unrestricted with comparison to recreational*

Available Data - historical records in the Technical Baseline Report, discussions with Site personnel, and visual

## MEETING AGREEMENTS (Continued)

observations. A portion of this active gravel/borrow pit has received construction debris which includes barrels, asbestos, and possibly test equipment piping from 1706KE. Radiological contamination may be associated with some of the waste materials. While construction debris has been noted at various times at this site, currently, fill has been pushed over the contents.

### Analytes of Interest

- asbestos
- radionuclides

### Step 1. State the Problem

Possible risks at this site are liquids from drums migrating to the groundwater, exposure to asbestos if the area is disturbed, and possible radiological contamination via test loops from 1706KE.

- Leaving the drums in place may pose a risk to groundwater.
- Leaving asbestos in place may pose a risk to workers.

### Step 2. Identify the Decision

Is the asbestos deep enough to prevent potential surface exposure? The short-term answer is to post no-digging signs.

### Step 3. Identify the Inputs to the Decision

- Possible geophysics evaluation of material buried
- Groundwater depth and analytical data from downgradient wells
- Further historical information
- Calculation of total fill material covering the construction debris

It was agreed to reconvene and discuss the above inputs, then determine the decision rule.

### Step 4. Define the Study Boundaries

The footprint of the removed material from the western end of the gravel pit defines the boundary of the site, and can be determined visually.

## GROUP 11

Site: Aluminum Recycle Staging Area (pg 3-125)

### *Assumptions - industrial*

Available Data - historical aerial photos, surface radiation surveys.

Radioactively contaminated aluminum metal shavings areas. Depth is unknown. Greatest risk is from beta, however, the only risk pathway is dermal contact. Uranium contaminated metal shavings were stockpiled near the railroad track north of the 300 Area. A large area is now designated as surface contamination due to the metal shavings.

### Analytes of Interest

- Radioactivity based on beta emissions

## MEETING AGREEMENTS (Continued)

Page 3 of 3

### Step 1. State the Problem

- Leaving metal shavings in place could pose a radiological risk to workers.
- Leaving metal shavings in place could pose a risk of spreading the radiological contamination to the public.

### Step 2. Identify the Decision

At what radiation level does this area pose a risk to human health? Do we exceed an exposure of 15 mrem per year above background?

### Step 3. Identify the Inputs to the Decision

Risk Assessors will provide a risk number for radioactivity dose that will be the action level based upon 15 mrem greater than background and the agreed upon land use scenario. Any levels above that number will require remedial action.

### Step 4. Define the Study Boundaries

The areas of concern north of the 300 Area are denoted by Surface Contamination Area signs that are posted on chains strung around the areas.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	2 May 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	5/2/95
U.S. Department of Energy Donna M. Wanek	<i>Donna M. Wanek</i>	5/2/95

**MEETING AGENDA FOR APRIL 17, 1995**

The following is a schedule for the upcoming DQO sessions for the 300-FF-2 operable unit. Please mark these on your calendars. All are scheduled to be held in 2440 Stevens Ctr. Place.

Monday 4/17/95 8 am - 12 Room 2519

Wednesday 4/19/95 8 am - 12 Room 1416

Tuesday 4/25/95 8 am - 4 pm Room 1200

Wednesday 4/26/95 8 am - 4 pm Room 1416

On Monday we will briefly revisit a couple of the sites discussed on 4/11 and then proceed with the following sites:

- \* 600-23
- \* Aluminum Recycle Staging Area
- 600-47
- 618-9 Burial Ground
- UPR-300-1

If time permits we may also attempt to address some of the following sites:

- 400-1
- 400 Area Retired Sanitary Pond
- 400 Area Septic Tank or Cistern
- 400 Area Concrete Batch Plant
- 400 Area Material Dumping & Building Foundation

\* These sites were covered in the 04/17/95 meeting.

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 04/19/95	NUMBER ATTENDING 8

## Attendees:

R.A. Carlson	H6-05	L.C. Hulstrom	H6-05	P.R. Staats	B5-18
D.R. Einan	B5-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
M.J. Galgoul	H6-01	J.A. Sheriff	B1-42		

cc: R.G. McLeod H4-83  
G.D. Joyce B1-42

Attachments: (1) Agenda

Action Item 041195-1: The 303-M Facility was discussed. It is unclear if the 303-M Storage Area is inactive and will remain inactive. Donna requested the documentation that officially transitions the facility to ER.

## GROUP 15

Site: 618-9 Burial Ground (pg 6-18)

*Assumptions - Whatever was assumed during the Expedited Response Action (ERA)*

Available Data - 618-9 ERA reports. Hexone containing drums contaminated with uranium. The ERA removed all drums and verified that the site was clean.

### Step 1. State the Problem

There is no problem here as the site has been cleaned. It will still be considered in the Record of Decision for the 300-FF-2 Operable Unit.

## GROUP 10

Site: UPR-300-1 (340 Building Complex, 399-3-8) (pg 5-1)

*Assumptions - industrial*

Available Data - soil and groundwater sample data from the occurrence is available, however the location of well 399-3-8 is uncertain. A leak from a transfer pipe near the 340 complex released fission products into the soils. Some contamination was removed but the extent of remediation is undocumented. Groundwater well 399-3-8 was installed at the location of the release but its location and present status is uncertain. It was agreed that wells 399-3-12, 399-3-11, 399-3-3, and 399-3-7 would provide the current groundwater data.

### Step 1. State the Problem

The location and status of the 399-3-8 well is uncertain. A risk to groundwater may exist if the well was not abandoned properly. In order to assess the risk, some investigation must be done.

**Step 2. Identify the Decision**

Does well 399-3-8 act as a conduit and pose a risk to groundwater?

**Step 3. Identify the Inputs to the Decision**

- Obtain gross beta, cesium-137 and strontium-90 data in surrounding monitoring wells 399-3-12, 399-3-11, 399-3-7 and 399-3-3.
- Obtain geophysical data of the site to determine the location of the well.

**Step 4. Define the Study Boundaries**

The area south of the 340 Building where the release occurred defines the site boundaries. UPR-300-2 and UPR-300-11 occurred in the same general vicinity.

**Step 5. Develop the Decision Rule**

- If geophysics finds the well, then excavate and evaluate fitness-for-use.
  - If well 399-3-8 is fit for use, then transfer it to the 300-FF-5 Operable Unit for use or integrate it into the groundwater monitoring program.
  - If well 399-3-8 is not fit for use, then abandon properly.
- If the downgradient wells show elevated total beta as compared to the upgradient wells, well 399-3-8 may pose a risk. This information will be communicated to the appropriate group within D&D and the well will be deferred to D&D.

**GROUP 17**

Site: 600-47 (Debris North of 300 Area) (new WIDS site), plus 4 Surface Contamination Areas (SCAs) which came from TEDF report.

*Assumptions - industrial*

Available Data - information in WIDS, based on visual observations. Surface debris that may be pre-Hanford (Fruitvale community) has been found in an area north of the 300 Area near the TEDF outfall line. Field screening has indicated signs of radioactive contamination on debris and in soil at four discrete areas, now marked as SCAs.

NOTE: Preliminary statements are made in the following steps, pending a review of available information, a field walkover, and further discussions.

**Step 1. State the Problem**

The debris and other sites in the area may pose a risk to human health due to the possible radioactive contamination.

**Step 2. Identify the Decision**

Does the site pose a risk to human health due to radioactive contamination?

**MEETING AGREEMENTS (Continued)****Step 3. Identify the Inputs to the Decision**

Review the TEDF File and other historical information to determine more information on the extent of the radiological survey performed for the TEDF.

Field reconnaissance to validate photographs in the TEDF file and to obtain information identifying the location of each of the SCAs.

**GROUP 19**

Site: 400-1 (dump area near 400 Area) (pg 4-79)

*Assumptions - industrial*

Available Data - information in Technical Baseline Report, based on visual observations

Preliminary questions need to be answered before continuing with the DQO Process:

- Is the site in question still active? If it is active, it would not apply to the CERCLA process and therefore would not be appropriate to include in the Work Scope.
- What determined the description of "non-hazardous" and "non-radioactive" in the Technical Baseline report?

**GROUP 20**

Site: 400 Area Retired Sanitary Pond (pg 4-72)

*Assumptions - industrial* (This site is within the 400 Area complex, but could be addressed at this time if desired or it could be addressed later with the 400 D&D activities.)

Available Data - information in Technical Baseline Report, based on visual observations

**Step 1. State the Problem**

- There is not a problem at this site and it will be removed from 300-FF-2 Work Scope.

**GROUP 21**

Site: Undocumented Waste Site (400 Area Septic Tank or Cistern) (pg 4-111)

*Assumptions - industrial*

Available Data - information in Technical Baseline Report, based on visual observations

**Step 1. State the Problem**

There is some question as to the contents and the status of the site. The site may pose a risk if the contents of the tank have not been properly managed. Identify whether this site poses a chemical or radiological risk.

# MEETING AGREEMENTS (Continued)

Page 4 of 4

## Step 2. Identify the Decision

- Does this site pose a chemical or radiological risk?

## Step 3. Identify the Inputs to the Decision

- Visual inspection to determine contents
- Survey with a P-11 probe to determine constituents of tank.

## Step 4. Define the Study Boundaries

The cistern location and any contaminated surrounding soil defines the boundary.

## Step 5. Develop the Decision Rule

- If visual inspection finds sludge, then contents will be removed and tested for metals and gross beta.
- If hazardous chemicals leaked at levels above 100 times the MTCA groundwater levels, then revisit the issue to determine the proper course of action.
- If radioactive, then revisit the issue to manage radioactive contents appropriately.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	2 May 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	5/2/95
U.S. Department of Energy Donna M. Wanek	<i>Donna M. Wanek</i>	5/2/95



**MEETING AGENDA FOR APRIL 19, 1995**

The following is a schedule for the upcoming DQO sessions for the 300-FF-2 operable unit. Please mark these on your calendars. All are scheduled to be held in 2440 Stevens Ctr. Place.

Monday 4/17/95 8 am - 12 Room 2519  
Wednesday 4/19/95 8 am - 12 Room 1416  
Tuesday 4/25/95 8 am - 4 pm Room 1200  
Wednesday 4/26/95 8 am - 4 pm Room 1416

On Monday we will briefly revisit a couple of the sites discussed on 4/11 and then proceed with the following sites:

- 600-23
- Aluminum Recycle Staging Area
- \* 600-47
- \* 618-9 Burial Ground
- \* UPR-300-1

If time permits we may also attempt to address some of the following sites:

- \* 400-1
- \* 400 Area Retired Sanitary Pond
- \* 400 Area Septic Tank or Cistern
- 400 Area Concrete Batch Plant
- 400 Area Material Dumping & Building Foundation

\* These sites were covered in the 04/19/95 meeting.

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 04/25/95	NUMBER ATTENDING 8

## Attendees:

D.R. Einan	B5-01	C.R. Johnson	H6-04	P.R. Staats	B5-18
M.J. Gulgoul	H6-01	G.D. Joyce	H4-86	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05	K. Kimmel	B1-42		

cc: R.G. McLeod H4-83

## AGREEMENTS

1. It was agreed that the ERC team does not require formal action items designated for further data gathering activities.
2. A discussion was held concerning what criteria to use to retain surface sites in the scope of the work plan:
  - It was agreed that a site must be inactive.
  - It was agreed that a survey for radioactivity would be performed on the inactive site unless existing information indicates the site is non-radioactive:
    - If field screening places a site as a Surface Contamination Area (SCA), then it will be retained in the work plan and further investigation will be conducted to determine risk.
    - If a site does not meet SCA criteria, then it becomes a landlord issue, it is not a CERCLA site, and is removed from the scope of the work plan.
3. The groundwater protection criteria are currently unresolved.

## MEETINGS SCHEDULED

- Tuesday afternoon and Wednesday morning May 2 and 3.
- Tuesday and Wednesday May 9 and 10 all day (to cover the remaining three sites and the burial grounds).

## GROUP 22

Site: Undocumented Waste Site, 400 Area Concrete Batch Plant, (pg 4-104)  
 Undocumented Waste Site, 400 Area Material Dumping and Building Foundation, (pg 4-108)  
 Undocumented Waste Site, 400 Area Construction Material Dumping Area, (pg 4-104)  
 Undocumented Waste Site, 400 Area Burn Pit, (pg 4-103)  
 Undocumented Waste Site, 400 Area Waste Dumping Area, (4-113)

*Assumptions - industrial, possibly recreational*

**MEETING AGREEMENTS (Continued)**

Page 2 of 4

Available Data - information in Technical Baseline Report, based on visual observations. These undocumented sites appear to be either FFTF construction or maintenance related sites. They are inferred to be nonradioactive since they are related to pre-startup of FFTF. Indications from FFTF personnel are that all of the sites are inactive.

**Step 1. State the Problem**

According to the stated criteria for retaining sites in the work plan, it is agreed that these sites are removed from the scope of the work plan.

**GROUP 23**

Undocumented Waste Site, 400 Area Suspected Burial Ground, (pg 4-112) appears to be specifically dumped and buried.

*Assumptions - industrial, possibly recreational*

Available Data - ERC team will gather aerial photos to determine when this burial site was open, its configuration, plus any additional data. Suggestion to use the micro-R meter if the decision is made to survey for radioactivity.

**GROUP 9**

Site: 316-4 Crib (pg 3-69)

*Assumptions - recreational but compare to a range of alternatives*

Available Data - limited to historical accounts and site drawings, limited historical groundwater data is available through HEIS or older reports. A surface radiation survey found no radiation. The surface geophysical survey has been completed. PNL document 2557 provides data gathered from boring through the vent pipe to a depth of 75 cm below the tank, and a more recent letter report was provided by Karl Fecht and Bruce Ford. Decision-makers requested a copy of each document to review. Groundwater is at 68' below ground surface. Organic wastes were discharged in 1962 which created a layer of uranyl phosphate just below the tanks. 200,000 L of hexone bearing uranium liquid wastes were placed in two inverted bottomless tanks. Approximately 1,000 kg of nitrate, 2,000 kg of uranium, and 3,000 kg of hexone were released to the soil. The exact nature and current extent of contamination in the vadose zone and groundwater is unknown, although there is historical groundwater data.

**Step 1. State the Problem**

- Do the soils or groundwater at this site pose a risk to human health or the environment due to the release of radioactive contaminants?
- Does this site pose a risk to groundwater?

**Step 2. Identify the Decision**

The decision will be one of the following:

1. Leave material in place.
2. cap in place.
3. excavate to eliminate potential risk or potential impact.
4. combination of above.

**MEETING AGREEMENTS (Continued)**

Page 3 of 4

**Step 3. Identify the Inputs to the Decision**

Copies of the Karl Fecht and Bruce Ford letter report and PNL 2557.

**Step 4. Define the Study Boundaries**

The crib is adjacent to the southeast corner of the 618-10 burial ground and is delineated by concrete marker posts and a concrete pad where the pumphouse was located. The bottom of the tanks is about 10-20 ft below grade. Depth to groundwater in the area is approximately 68 feet or between 50 to 60 feet from the bottom of the tanks.

**Step 5. Develop the Decision Rule**

Groundwater protection criteria are still pending.

**GROUP 1**

Site: Ashe Substation Oil/Water Separator and Dry Well (pg 3-123)

**Step 1. State the Problem**

This site is currently active so does not meet the criteria for retaining sites in the work plan. It will be deleted from the scope of work.

**GROUP 2**

Site: 307 Trenches (PG 3-67)

307 Retention Basins (pg 3-46)

*Assumptions - industrial*

Available Data - Characterization data from 300-FF-1 summarized in *Summary of Remedial Investigations at the 307 Retention Basins and 307 Trenches (316-3)*, 300-FF-2 *Operable Unit*, WHC-SD-EN-TI-279, Rev. 0. The 307 Trenches were a liquid waste disposal site near the Columbia River that was decommissioned, but filled in with fill material/scrapings from the area of the South Process Pond, and the information regarding the adequacy of remediation is limited. The 307 Trenches are inactive and have small buildings are over them. The 307 Retention Basins are an active liquid waste transfer point. Soil information was obtained from boreholes drilled as part of the 300-FF-1 Operable Unit characterization. Phil Staats will research the 216 permit status and the length of time it will be in effect.

**Step 1. State the Problem**

- Leaving materials in place at the 307 Trenches may pose a risk to worker safety; and may pose a risk to groundwater.
- The 307 Retention Basins are active waste sites, so do not meet the criteria for retaining sites in the work scope. These basins will be deleted from the scope of the work plan and deferred until D&D of the 300 Area buildings.

**Step 2. Identify the Decision**

The decision will be one of the following:

## MEETING AGREEMENTS (Continued)

1. Leave material in place.
2. cap in place.
3. excavate to eliminate potential risk or potential impact.
4. combination of above.

**Step 3. Identify the Inputs to the Decision**

- For industrial risk assessment, the input will be a QRA that becomes a driver for an action at an ICR of  $1 \times 10^{-5}$  or a Hazard Quotient of 1.
- Groundwater protection criteria still pending.

**Step 4. Define the Study Boundaries**

The 307 Trenches area is defined by boundary markers. Soils in the vicinity of each site have been sampled as part of the 300-FF-1 operable unit characterization.

**GROUP 6**

Site: UPR-600-22 - (600-21 WPPSS Windrow Site) (pg 6-2)

*Assumption - Industrial land-use*

Available Data - limited to historical accounts, no analytical data readily available. A surface radiation survey was done using MANRADS. No radioactivity was detected at the windrows site. The data indicate radioactive shine coming from the Supply System. The occurrence report says the spill occurred in 1967. An airborne release of radioactive contamination from the 618-11 burial ground created this site. Characterization/ stabilization activities in 1972 found no evidence of further contamination. The boundaries of the site are delineated by the presence of the "windrows". Height of the windrows is approximately 2 feet. It was agreed that knowledge of the radioactive species that were dumped is not required.

**Step 1. State the Problem**

Based on the agreed to criteria for retaining surface sites, this site will be removed from the scope of the work plan. This site will be closed out when the 618-11 site is closed out.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	3 May 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	5/3/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	5/3/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 05/02/95	NUMBER ATTENDING 10

## Attendees:

R.A. Carlson	H6-05	G.D. Joyce	H4-86	P.R. Staats	B5-18
D.R. Einan	B5-01	K. Kimmel	B1-42	G.E. Van Sickle	H6-05
M.J. Galgoul	H6-01	J.A. Lowe	H4-92	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

cc: R.G McLeod H4-83

Attachments: (1) Agenda

## SUMMARY AND AGREEMENTS

- Minutes from the 04/25/95 minutes were discussed and revised.
- A Table of Contents by waste Group will be prepared after the DQO process, listing each set of minutes that covers a particular Group so that all decisions for each Group can be tracked.
- Larry Hulstrom provided follow-up on Action Item 041195-1: the 303-M Storage Area is inactive, is under WHC control, and there are no planned uses for it. It will be transitioned to ER on 09/30/97. This information closes Action Item 041195-1.
- Phil Staats researched the 216 permit on the 307 Retention Basins. These basins are not a part of the permit. It was agreed that the 307 Retention Basins will be moved to waste Group 13 which includes the sewer lines.
- Larry Hulstrom reviewed the status sheet from the canceled April UMM. It was agreed that the two soil samples taken for the surface soil sampling task will not require validation.
- It was agreed that a full CLP package will be required on the UFO Landing Site samples taken for this work plan. No data validation will be performed.
- The burial grounds 618-10 and 618-11 were briefly discussed. These burial grounds contain transuranic waste. It was suggested that the burial grounds should not be excavated until there is some place to dispose of the waste.

## GROUP 9 (316-4 Crib continued)

Groundwater Protection Criteria: Protection of groundwater is an issue that is extremely difficult on which to reach consensus. There is no definitive guidance that can be used as a basis for decision making. The Department of Ecology and the U.S. Environmental Protection Agency co-authored a letter dated March 27, 1995, addressed to the Department of Energy, in which the regulators reached consensus on groundwater protection criteria, now being


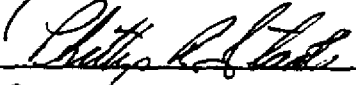

## MEETING AGREEMENTS (Continued)

proposed for the 100 Area. Discussions of this proposal and its impacts on the 300 Area will be held after a full review by Donna Wanek.

Discussed were possible methods to ensure groundwater protection:

- No further degradation of groundwater quality directly below the waste site
- Near river wells as points of compliance
- Back calculate contaminant concentrations in soil which are protective of groundwater

It was suggested that a borehole through the 316-4 crib be required to determine the distribution of the contaminants. The data would be used in a groundwater protection model and (possibly) for an excavation contract.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		9 May 95
Washington Department of Ecology Phillip R. Staats		5/9/95
U.S. Department of Energy Donna M. Wanek		5/9/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 05/03/95	NUMBER ATTENDING 7

## Attendees:

D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

cc: R.G McLeod      H4-83

## GROUP 9 (316-4 continued)

Brainstorming a strategy for protecting groundwater, several items were discussed and the following identified:

- Establish present groundwater condition
- Monitor groundwater for uranium, nitrate, hexone
- Determine soil concentrations of nitrate, uranium, hexone
- Use MTCA, with a multiplication factor, as a method to establish action levels in soil.

BHI was asked to provide costs for a removal scenario and a cone penetrometer boring scenario; review the Summer's model to determine what inputs are needed and make a recommendation on which model to use.

## Explanation of how the 100 Areas thinking would play out for the 316-4 site:

Phil Staats provided the following scenario in the case that the 300-FF-2 OU would adopt the strategy proposed for the 100 Areas by EPA and Ecology: Point of compliance is directly under the source. Need a distribution of each of the contaminants, make sure that 15 mrem/yr (recreational scenario) or less is in the first 15 feet after the overburden is removed, as well as MTCA levels for the rest. Evaluation to ensure the groundwater is protected.

The DQO process is still pending on this site.

## Step 1. State the Problem (bullet 1 restated and revised)

- Do the soils at this site pose a risk to human health or the environment due to the release of radioactive contaminants?
- Does this site pose a risk to groundwater?

## Step 4. Define the Study Boundaries

Soils directly beneath the crib with some lateral extension.


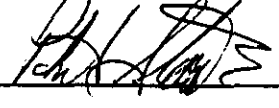
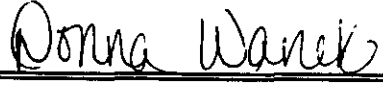


## MEETING AGREEMENTS (Continued)

## Step 5. Develop the Decision Rule

- Tentatively: If  $> 15$  mrem/yr above background or exceed MTCA, then excavate to 15' below the top of the engineered structure. (RL to clarify their position on the 15' depth.)
- Tentatively: If modeling indicates that MCL would be exceeded in the groundwater, then remedial alternatives will be investigated.
- It was agreed that the proposed maximum contaminant level (MCL) of 30 pCi/L for uranium would be the cleanup criterion applied to the groundwater at the 316-4 crib.
- If the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background exposure for the Contaminants of Concern, then excavation will continue.

NOTE: Steps 1 through 5 tentatively defined, pending final decisions on groundwater issues.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		8 Jun 95
Washington Department of Ecology Phillip R. Staats		6/8/95
U.S. Department of Energy Donna M. Wanek		6/8/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 05/09/95	NUMBER ATTENDING 8

## Attendees:

S.C. Adams	H6-03	L.C. Hulstrom	H6-05	P.R. Staats	B5-18
D.R. Einan	B5-01	G.D. Joyce	H4-86	D.M. Wanek	H4-83
M.J. Galgoul	H6-01	K. Kimmel	B1-42		

cc: R.G McLeod H4-83

Two 4-hour sessions were scheduled for Wednesday mornings May 17 and 24 to wrap up open items.

Status of the EPA/Ecology Letter to Linda McClain - This letter has not been officially responded to, however, RL is seriously considering accepting this proposal. Bechtel is concerned with the 15' measurement and the impacts of using the top of an engineered structure as the starting point.

## GROUP 3

Site: 618-10 (pg 6-25), 618-11 (pg 6-27) Burial Grounds & Associated UPR's (UPR-600-1 through UPR-600-10) (pp 5-20 - 5-24)

*Assumptions - Industrial scenario (618-11 burial ground and related UPR's); Recreational scenario but with comparisons to a range of alternatives (618-10 burial ground and related UPR's)*

Available Data - air monitoring data, waste types, method of disposal, estimates of quantity, surface radiation survey, groundwater data (618-10 only). The 618-10 and 618-11 burial grounds contain low- to high-level dry wastes, fission products (TRU) and plutonium in a variety of waste forms. Insufficient information exists to determine if a threat to human health and the environment exists. 618-11 is located near the WPPSS #2 reactor. The 618-11 site is specifically identified in the Hanford Defense Waste Final Environmental Impact Statement as a site that will be exhumed in the future.

## Information Items:

- It was agreed that these sites will be deferred from the Data Quality Objectives process. Discussions concerning these sites will be summarized and presented as information items.
- BHI to provide a summary of how animal/insect intrusion at a burial ground is handled.
- Rationale for the proposed treatability test: The steps in the investigational approach proposed in the work plan build on each other, culminating in the treatability test. The rationale for performing the treatability test is for the flow of information which leads to an Interim Remedial Measure (IRM). With the decision made to postpone excavation, a treatability test is not required at this time, and it is removed from the work scope.
- The 200 Areas is investigating retrieval of transuranic waste and that effort should not be duplicated.

**MEETING AGREEMENTS (Continued)**

- The discussion moved to whether or not to characterize the burial grounds. The data would: define the depth of contamination; speed up packaging, storage and disposal decisions.
- Locate one new well to monitor the 618-11 burial ground; identify which well(s) to monitor the 618-10 burial ground. Frequency of monitoring to be determined.
- It was agreed that burial ground contents would not be removed until repackaging, storage and disposal facilities for the waste are available. It is anticipated that over the course of the next ten years there will continue to be no WRAP II or WIPP facility for packaging and disposal of the transuranic wastes contained in the 618-10 and 618-11 Burial Grounds.

**GROUP 4**

Site: 618-1 (pg 6-7), 618-2 (pg 6-9), 618-3 (pg 6-10), UPR-300-14 (release near 618-1 BG) (pg 5-10), 303-M Uranium Oxide Facility (pg 3-40), 303-M Storage Area (pg 3-39).

*Assumptions - Industrial scenario; excavation and removal (618-2 & 618-3); 618-1, UPR-300-14, the 303-M Uranium Oxide Facility, and the 303-M Storage Area will be deferred until 300 Area D&D activities.*

Available Data - air monitoring data, waste types, method of disposal, indications of quantity, surface radiation survey, groundwater data (general vicinity only)

- Burial Ground 618-1, UPR-300-14, 303-M Storage Area, and 303-M Uranium Oxide Facility will be deferred until D&D activities.

**Step 1. State the Problem**

Burial grounds pose a risk to human health and the environment and will be removed.

**Step 2. Identify the Decision**

- Remove the material in the footprint of the burial grounds until the risk is eliminated.

**Step 3. Identify the Inputs to the Decision**

Field screening/sampling of excavated material and of footprint to determine completion.

**Step 4. Define the Study Boundaries**

The footprint of the burial grounds and soils directly beneath.

**Step 5. Develop the Decision Rule**

If the soil below the excavated material exceeds MTCA Method C levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

**MEETING AGREEMENTS (Continued)****GROUP 8**

Site: Burial Ground West of Process Trenches (pg 3-116), 618-8 (pg 6-17) Burial Ground, Undocumented Solid Waste Burial Ground (near 618-8) (pg 3-99), Solid Waste Burial Ground (Early BG) (pg 3-100)

*Assumptions - industrial*

Available Data - limited to historical accounts, no analytical data readily available. The Burial Ground West of the Process Trenches appears to contain radioactive metal shavings similar to the Aluminum Recycle Staging Area. The Undocumented Solid Waste Burial Ground (near 618-8) appears to consist of construction related debris, but the nature and extent of contamination is unknown. The Solid Waste Burial Ground (Early BG) appears in documentation to have existed at a previously undocumented location. Its location and contents are unknown. The 618-8 Burial Ground is thought to be a single trench. Its configuration is defined by surface geophysics surveys and boundary markers, and drawings delineate its general profile. It is partially covered by a parking lot. All of these sites are immediately north of the 300 Area.

- Solid Waste Burial Ground (Early Burial Ground) is the only waste site in this Group not found in the field. Extensive use of historical information, field observations and geophysical methods have not been able to locate it. No further action is required. It is removed from the scope of the work plan. As a further note, Figure 3-47 (p 3-102) in Revision 00 of the Technical Baseline Report mislabels the Early Burial Ground, it should read "Borrow Pit."
- The Burial Ground West of the Process Trenches (metal shavings site) will be moved to Group 11 to be considered with the Aluminum Recycle Staging Area.
- The remaining sites, Undocumented Solid Waste Burial Ground and 618-8 Burial Ground, will be deferred until D&D activities. It was agreed that the downgradient well is not required and that no cone penetrometer is needed.

**Step 1. State the Problem**

Burial Grounds pose a risk to human health and the environment.

**Step 2. Identify the Decision**

Burial grounds will be excavated until the risk is eliminated.

**Step 3. Identify the Inputs to the Decision**

Field screening/sampling of excavated material and of footprint to determine completion.

**Step 4. Define the Study Boundaries**

- The Undocumented Solid Waste Burial Ground (near 618-8) is defined by surface geophysics surveys, and contains scattered surface debris.
- The 618-8 Burial Ground is defined by boundary markers, drawings and surface geophysics surveys.

## MEETING AGREEMENTS (Continued)

**Step 5. Develop the Decision Rule**

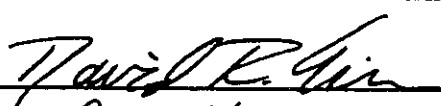


Using the observational approach, if the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

**GROUP 11**

The Burial Ground West of the Process Trenches was moved to Group 11. Add the following Step 4. to Group 11 discussions:

**Step 4. Define the Study Boundaries**

- The Burial Ground West of the Process Trenches has a visually well defined boundary.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		8 Jun 95
Washington Department of Ecology Phillip R. Staats		6/8/95
U.S. Department of Energy Donna M. Wanek		6/8/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 05/10/95	NUMBER ATTENDING 8

## Attendees:

D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05	A.J. Knepp	H4-85		

cc: R.G McLeod H4-83

Future Data Needs Determine what confidence we will need in the data when using the observational approach. Decisions on closure sampling strategies and our confidence in the data along with the PARCC parameters can be made now, too.

## GROUP 8 (continued) Recap of 05/09/95:

The Solid Waste Burial Ground which has been removed from the scope of the work plan will nonetheless be included in the remedial investigation report for the sake of completeness.

## GROUP 7

Site: 618-13 Burial Ground (mound) (pg 6-31)

*Assumptions - industrial, excavate and remove*

Available Data - limited to historical accounts, no analytical data readily available, geophysical data indicates there are no metals. The mound of soil supposedly came from contaminated topsoil that was removed from the 303 Building area. The nature of the contamination is radiological.

## Discussion Items:

- If characterization is required, Bechtel proposes two cuts into the west side of the mound to the center with field screening for radioactivity and volatiles, one cut into the center of the east side. Cuts down to ground level. Laboratory samples for metals [including rad if present, including volatiles if present], will be based on the highest levels detected by field screening. Maximum of three samples, one from each cut. The GM and OVA will be used for field screening. Tentatively: If lab analyses exceed radioactivity at 15 mrem/yr but less than 25 mrem/yr soil can be moved to the North or South Process Ponds in the 300-FF-1 Operable Unit. If greater than 25 mrem/yr then remove to licensed landfill (such as ERDF).
- The observational approach could be utilized to segregate contaminated and uncontaminated soils. The contaminated soils would be disposed to a licensed landfill.

**MEETING AGREEMENTS (Continued)****Step 1. State the Problem**

The site may pose a risk from radioactivity and metals to workers.

**Step 2. Identify the Decision**

Can this site be released for any use?

**Step 3. Identify the Inputs to the Decision**

Provide a statistical number of samples needed for representativeness.

**Step 4. Define the Study Boundaries**

The soils in the area of the mound and 20 feet around the mound will be surveyed.

**Step 5. Develop the Decision Rule**

*Pending.*

**GROUP 5**

Site: 618-7 Burial Ground (pg 6-14)

*Assumptions - Industrial scenario*, excavation and removal unless risk assessment judges cap and/or monitoring to be preferred

Available Data - air monitoring data, waste types, method of disposal, indications of quantity, surface radiation survey, groundwater data (general vicinity only). Drummed containers of solvent with moderate amounts of uranium were buried in the burial ground along with hundreds of drums of zircaloy chips which are pyrophoric in nature.

**Step 1. State the Problem**

- This site may pose a risk to groundwater.
- This site may pose a risk to workers.

**Step 2. Identify the Decision**

It was agreed to remove the burial ground.

**Step 3. Identify the Inputs to the Decision**

- *Data from Wells 399-8-5A, B, and C will be reviewed (need purpose of review)*
- No further data is required. Assumption at this point is that this site will be excavated. The regulations will determine the cleanup levels for the contaminants of concern.
- Field screening/sampling of excavated material and of footprint to determine completion.

**Step 4. Define the Study Boundaries**

The footprint of the burial grounds and soils directly beneath.

## MEETING AGREEMENTS (Continued)

Page 3 of 3

## Step 5. Develop the Decision Rule

Using the observational approach, if contaminants of concern exceed MTCA Method C, 15 mrem/yr above background or other risk-based concentrations, then excavation will continue.

## Information Items:

- 307 Trenches - Bechtel to determine if groundwater monitoring can pinpoint contamination to the 307 Trenches.
- Groundwater Protection - Tony Knepp provided an overview of Bechtel's currently proposed groundwater protection strategy.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	8 Jun 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	6/8/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	6/8/95



# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	05/17/95	8

## Attendees:

D.R. Einar	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05	R.C. Smith	H4-14		

cc: R.G McLeod      H4-83

## SUMMARY AND AGREEMENTS

- There was agreement to use the observational approach to excavate and remove burial grounds.
- Risk Assessment Discussion - A discussion was held on when and whether to conduct a baseline risk assessment. The current plan on remediating the waste sites is when each of the sites is closed, the whole site will be closed. If residual risk needs to be assessed, then risk assessors must be involved in closure sampling for those sites using the observational approach to excavation.
  - If risk numbers are used to clean a site, the value of a risk assessment on any residual contamination is unclear. Dave Einar took the action to identify if we remediate to risk-based cleanup standards, will a risk assessment be required?
  - The question was raised, will the risk assessment be run on only waste sites or on the whole land mass? The typical Hanford application has been to assess each site individually.
  - Concerning the UFO Landing site closure, will risk assessors need more information? Will a risk assessment be needed for sites like the UFO Landing Site?
- 618-10 and 618-11 Burial Grounds
  - 618-10: Available data on the contaminants of concern is minimal. Wells 699-S6-E4B and 699-S6-E4D are typically sampled by the site-wide monitoring program, but data is mainly on nitrate concentrations. Larry Hulstrom provided a list of recommended wells: 699-S6-E4B & D, E4A (camera survey needed), EF&G need too much work to use. The suggested analyte list includes VOAs, metals, anions, uranium, gross alpha, gross beta and gamma energy analysis (GEA). This list provides a large suite of analyses. BHI proposes to conduct two quarters (or rounds) of sampling and analysis, and then transfer the wells to the site-wide monitoring program for periodic monitoring. Dave Einar requested the groundwater flow direction and a comparison to previous data. There is concern on exactly how the data will be used, since no field action will be taken immediately based on the data. Monitoring is a proactive activity to demonstrate protection of the river. If contaminant levels should prove extremely high, then the issue will be elevated. Donna Wanek took the action to find out how long it will take for the site-wide monitoring group to include the monitoring activities noted

# MEETING AGREEMENTS (Continued)

Page 2 of 2

above, by the next meeting.

- 618-11: The proposed monitoring location (well installation) is directly downgradient, preferably west of the road; gradient is directly west to east. Several wells were reviewed which are useable: Wells 699-13-1A and 699-13-1B were recommended. BHI to review Well 699-12-2A as a monitoring point and Well 699-14-3 as a cross-gradient well which could be used to determine where contaminants are coming from (i.e., definitely not from 618-11 but affected by upgradient sources). The contaminants of concern and monitoring frequency are as listed for 618-10.
- Information was provided concerning surveillance and monitoring activities. HPTs survey annually with the MSCM tractor (cutting across the burial ground). If evidence of burrowing animals or insects, it is reported to the RARA program. If the MSCM alarms, then hand-held instruments are used, and the information is logged. RARA Surveillance inspects quarterly. Animals are not generally trapped or killed. A large number of questions was generated by the information. Next meeting a team member will attend who can provide the answers to those questions.

## GROUP 7

### 618-13 Mound

- The mound, estimated volume of 5000 cubic yards, will be removed.
- BHI provided a statistical approach to sampling and analysis using the following three scenarios: a hotspot the size of 1) a 55-gallon drum, 2) a basketball, and 3) homogeneous contamination. 12,500 samples would be required to locate a 55-gallon drum. Greater than 100,000 samples would be required to locate a basketball. 3 samples would be required for homogenous contamination. All scenarios are based on a 90% confidence level that contamination is located.

## Step 5. Develop the Decision Rule

*Pending.*

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	31 May 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	5/31/95
U.S. Department of Energy Donna M. Wanek	<i>Donna M. Wanek</i>	5/31/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	05/24/95	7

## Attendees:

D.R. Einan	B5-01	K. Kimmel	B1-42	P.R. Staats	B5-18
M.J. Galgoul	H6-01	J.A. Sheriff	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

cc: R.G McLeod H4-83  
G.D. Joyce A4-35

A minimum of two more meetings will be needed. The following dates and times were available: May 31 morning 8-12, June 7, June 8, and June 9 afternoon 1-4.

## SUMMARY AND AGREEMENTS

- Surveillance & Monitoring Procedures: An update was provided on the BHI procedures for S&M. Records are not kept from these activities. If something is discovered that requires work, the work is scheduled. All agreed that this issue is no longer worth pursuing.
- It was agreed that no baseline risk assessment will be required after excavation using risk-based action levels.

## GROUP 3

- 618-11 Burial Ground: Larry Hulstrom provided a review of the area wells and a handout. Options were provided by BHI on upgradient wells to use. Donna Wanek requested a hydrogeologist review and make a recommendation on the wells: which wells to monitor, how many wells are needed, and how often to sample. Note that the site-wide monitoring program will add analytes to their list if they are already monitoring the well(s) chosen for 300-FF-2.
- 618-10 Burial Ground and 316-4 Crib: Larry Hulstrom provided two handouts on the wells in this vicinity.
- This data gathering activity is outside the scope of the DQO process. No decisions are to be made using this data at this time. No data quality requirements will be established. The purpose for monitoring the groundwater downgradient of the 618-10 and 618-11 Burial Grounds is to determine if any contaminants are leaching from these burial grounds. This monitoring activity is to demonstrate accountability to the public: there is a potential problem and we are monitoring for any contaminants leaching into the groundwater.
- Risk assessors to provide their technical judgement on the analytes and the frequency of groundwater monitoring for the 618-10 and 618-11 Burial Grounds.

**GROUP 7**

618-13 Mound

- It was agreed that the observational approach will be used to excavate the mound, with screening for metals and radioactivity. Contaminants of potential concern include the metals copper, chromium, and uranium.
- BHI was tasked with providing the detection limits and calibration requirements of field XRF analysis.

**Step 1. State the Problem**

The site may pose a risk from radioactivity and metals to workers.

**Step 2. Identify the Decision (from 05/10/95 minutes)**

Can this site be released for any use?

**Step 3. Identify the Inputs to the Decision**

- Field screening/analytical data to determine final disposition of excavated material.
- Each loader bucket will be field screened.
- Confirmation samples will be sent to a laboratory to confirm the field screening. Statistician to determine how many samples are required.
- Excavation will continue with screening up to a depth of one foot below grade.

**Step 4. Define the Study Boundaries (from 05/10/95 minutes)**

The soils in the area of the mound and 20 feet around the mound will be surveyed.

**Step 5. Develop the Decision Rule**

- If the excavated material field screens below the regulatory limits, then it will be separated from the contaminated material. Soil will be maintained in an industrial area.
- If levels for contaminants of concern exceed MTCA levels or 15 mrem/yr for industrial land-use above background at one foot below grade, then the site will be reevaluated.

**GROUP 17**

600-47

- Larry Hulstrom provided a handout concerning these waste areas. The WIDS is currently being updated.
- One of the SCAs had more contamination in the soil than could be readily removed. More detail will be required on this site. It was agreed that the horizontal extent is well enough defined, although not the vertical extent.
- BHI was tasked to immediately research the eleven anomalies from the TEDF outfall to determine if these contain buried waste. If there is the possibility that any one site contains buried waste, it will be added to the scope of the work plan.

**MEETING AGREEMENTS (Continued)****Step 1. State the Problem**

The Soil Contamination Areas (SCAs) may pose a risk to human health and the environment.

**Step 2. Identify the Decision**

Use the observational approach to excavate the contaminated material and remove to a licensed landfill. Material will be screened to determine if it needs to be removed.

**Step 3. Identify the Inputs to the Decision**

- Walkover survey for surface radiation to establish areas for geophysical surveys.
- No surface sampling is required.

**Step 4. Define the Study Boundaries**

The footprint of the marked SCA and the soils directly beneath.

**Step 5. Develop the Decision Rule**

Using the observational approach, if contaminants of concern exceed MTCA Method C, 15 mrem/yr above background exposure, or other risk-based concentrations, then continue excavation.

**GROUP 16**

600-1 JA Jones 1

- The maximum concentration of contaminants in paint will be researched. It is suggested that these amounts do not pose a current hazard to human health and the environment.
- It was agreed that as long as the paint concentrations are minimal, that this site becomes a landlord issue.

**Step 3. Identify the Inputs to the Decision**

- It was agreed that no radiation survey is required at this point, we are confident that the earlier discovered radioactive material was completely removed.

**GROUP 18**

600-23

Historical information indicates there may be a small radiological risk. The specific isotopes are not known, but may be long-lived, in which case the decision will lean more toward a remedial activity.

**Step 1. State the Problem (from 04/17/95 minutes)**

Possible risks at this site are liquids from drums migrating to the groundwater, exposure to asbestos if the area is disturbed, and possible radiological contamination via test loops from 1706KE.

- Leaving the drums in place may pose a risk to groundwater.
- Leaving asbestos in place may pose a risk to workers.

**MEETING AGREEMENTS (Continued)****Step 2. Identify the Decision**

The observational approach will be used to remove the material in the dump.

**Step 3. Identify the Inputs to the Decision**

No geophysical survey is required.

**Step 4. Define the Study Boundaries (from 04/17/95 minutes)**

The footprint of the removed material from the western end of the gravel pit defines the boundary of the site, and can be determined visually.

**Step 5. Develop the Decision Rule**

If the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background (using an unrestricted scenario) for the contaminants of concern, then excavation will continue.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	4 Jun 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	6/8/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	6/8/95

# MEETING AGREEMENTS

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 05/31/95	NUMBER ATTENDING 7

## Attendees:

D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

cc: R.G McLeod H4-83

## SUMMARY AND AGREEMENTS

- John Lowe has been tasked with determining risk levels for herbicides at the UFO Landing Site.
- Contaminants of Concern - A discussion was held on establishing Contaminants of Concern (COC) at each site. There was concern that insufficient information is known to determine the COC for confirmatory sampling following excavation. Field screening methods look at a limited set of contaminants and this information will feed into limiting the confirmatory sampling. It was understood that it may not be possible to limit the list of contaminants. Possible options include:
  - Excavate, field screen and perform waste designation sampling, limit the confirmatory list based on waste designation.
  - Excavate, field screen, take 10% of samples to lab to confirm field screening.
- It was agreed to generate a contaminants of potential concern (COPC) list from historical information and waste acceptance criteria as a product of this DQO. The COC list will be refined from the COPC list during the excavation.
- ERC to evaluate compatibility of field screening with lab confirmation with confirmatory sampling.
- ERC to determine how much field screening and lab confirmation has been required in the 100 Area using lessons learned from soil washing, 118-B-1 excavation and pluto crib excavation.
- It was agreed that DQO Step 5 can be stated for sites which defer until D&D.
- It was agreed that for sites using the observational approach to excavation, Step 5 will be changed to include the following: If the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background exposure for the contaminants of concern, then excavation will continue.
- Further historical information was provided on GROUP 16, 600-1 pit. A specific portion of the pit is noted as the most likely area to locate the paints. Truckloads of paint cans were dumped, and paints and solvents were spilled. The following approach was discussed, and **will be discussed further at the next meeting**: Geophysics will be used to locate the cans; Soil gas survey over the marked area only; One test pit will be placed where geophysics and soil gas survey indicate there is paint.

## GROUP 12 600-22 UFO Landing Site

add the following bullet under Step 5:

### Step 5. Develop the Decision Rule

- If herbicides, gross alpha and gross beta are below action levels as determined by sample analysis, then no risk assessment will be required.

## MEETING AGREEMENTS (Continued)

**GROUP 19** 400-1 dump area

It was agreed that this site is a landlord issue and will be removed from the scope of work in the work plan.

**GROUP 23** 400 Area Suspected Burial Ground

- It was agreed that a radiation survey be performed in accordance with the requirements of section 222 of the HSRM-1 (Hanford Site Radiological Control Manual) Revision 2 to determine if posting as a surface contamination or soil contamination site (SCA) is required.

**Step 1. State the Problem**

The site may pose a radiological risk to human health and the environment.

**Step 2. Identify the Decision**

Can this site be removed from the scope of work or does the site require remediation?

**Step 3. Identify the Inputs to the Decision**



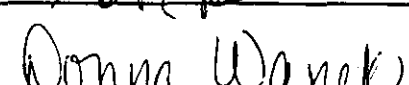
Perform a radiation survey.

**Step 4. Define the Study Boundaries**

The footprint of the burial ground and the soil directly beneath.

**Step 5. Develop the Decision Rule**

If the radiation levels are below the requirements for designating an SCA, then this site will be deleted from the scope of work in the work plan.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		8 Jun 95
Washington Department of Ecology Phillip R. Staats		6/8/95
U.S. Department of Energy Donna M. Wanek		6/8/95



# MEETING AGREEMENTS

BHI-00601  
Rev. 0

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 06/07/95	NUMBER ATTENDING 10

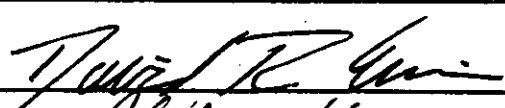
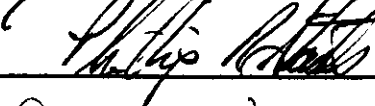

**Attendees:**

D.R. Einan	B5-01	C.R. Johnson	H6-04	R.C. Smith	H4-14
M.J. Gulgoul	H6-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
L.C. Hulstrom	H6-05	K. Kimmel	B1-42	D.M. Wanek	H4-83
		A.V. Robinson	H0-57		

cc: R.G McLeod      H4-83

## SUMMARY AND AGREEMENTS

- **Scope of the Work Plan:** Michael Gulgoul presented a diagram on the DQO flow path and the 300-FF-2 work plan, and asked for comments. He noted Bechtel has a need, based on scheduling, to break the work plan free as soon as possible. The facilitator, Greg Joyce, has been tasked with following the DQO process as far as the decision makers can. These two goals were discussed and it was agreed to begin the next day's discussions with the flow diagram. Dave Einan clarified that EPA looks at the interim record of decision (IROD) as though it is a final ROD. The sites should be completely closed as there is no intent to revisit the sites.
- **Group 7, 618-13 The Mound:**
  - **Field Screen:** An update was provided on the use of x-ray fluorescence (XRF) in the field. XRF is able to detect 150-250 pCi/g Uranium, 100-200 ppm Copper, and 500 ppm Chromium. Under residential levels, XRF can separate the really contaminated material from the less contaminated material, but cannot tell what is clean. XRF can see industrial levels of metals and is deemed a good tool for separating that material. A beta-gamma meter can screen for Uranium at 50-100 pCi/g which provides a more sensitive measurement than the XRF.
  - **Conceptual Model:** If the mound contains radioactive material, then any metals should be co-located, and beta-gamma screening should be sufficient. However, in the case that no radioactive material is uncovered, the metal screening using XRF would still be necessary.
  - **Agreement:** It was agreed that XRF field screening and beta-gamma field screening would be used at the mound.
- **Group 9, 316-4 Crib:** Excavation costs were briefly discussed and Charlie Johnson agreed to provide further detail at the next DQO meeting.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		16 Aug 95
Washington Department of Ecology Phillip R. Staats		8/10/95
U.S. Department of Energy Donna M. Wanek		8/16/95

# MEETING AGREEMENTS

BHI-00601

Rev. 0

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 06/08/95	NUMBER ATTENDING 10

**Attendees:**

D.R. Einan	B5-01	C.R. Johnson	H6-04	R.C. Smith	H4-14
M.J. Gulgoul	H6-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
L.C. Hulstrom	H6-05	K. Kimmel	B1-42	D.M. Wanek	H4-83
		Scott Petersen	H4-90		

cc: R.G McLeod H4-83

## SUMMARY AND AGREEMENTS

- The 300-FF-2 Candidate Sites DQO Flow Path diagram was discussed. It was agreed that everything we are doing should support the Proposed Plan. It was agreed that the DQO summary report should capture the decisions made and their rationale so that in the future those decisions can be more easily understood.
- It was agreed that the groundwater protection issue will be decided first in the 100 Area and adopted in 300-FF-2.
- It was agreed that contaminants of concern and their cleanup levels will be provided in the work plan.
- Tri-parties need to agree on the duration of exposure for the recreational scenario.
- Sample design will be decided on during the SAFER decisions made at the remedial design stage.

### Group 7 618-13 Mound

- It was agreed to defer the confirmatory sampling strategy for the mound until the sampling and analysis plan is written, since work is not expected to commence within the next year.

### GROUP 9 316-4 Crib

- It was agreed that the contaminants of concern are uranium, hexone, and nitrate. Risk-based action levels for closure must be calculated.
- Cleanup levels for uranium could be as low as 3-6 pCi/g in order to be protective of groundwater. This number is 100 times the proposed Maximum Contaminant Level (MCL). However, as noted above, it was agreed that the groundwater protection issue will be decided first in the 100 areas and adopted in 300-FF-2.
- Charlie Johnson provided comparison costs on the 316-4 Crib: characterization vs. removal without characterization. The costs, generated from the MCACES model, are rough order of magnitude, and use the same set of assumptions. EPA and Ecology agreed that these costs were not specific enough to be used as the basis for decision-making.
- Past experience with similar sites indicates the contamination is concentrated directly below the crib and is assumed to be within the first five feet.

- The issue of protecting groundwater is the driving force for cleaning up this site.

BHI-00601  
Rev. 0**Step 2. Identify the Decision as revised:**

Excavate using the observational approach to a depth of 15 feet below the top of the engineered structure.

**Step 5. Develop the Decision Rule**

- Using the observational approach, if the soil below the excavated material exceeds MTCA method C or 1. mrem/yr above background exposure for the contaminants of concern, then excavation will continue up to 15 feet below the top of the engineered structure.
- If contamination exceeds risk levels at 15 feet below the top of the engineered structure, then contaminant distribution and feasibility of continued excavation will be reevaluated.
- If groundwater protection criteria are exceeded after excavation to 15 feet below the top of the engineered structure, then the site will be reevaluated.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	16 Aug 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	8/10/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	8/16/95

# MEETING AGREEMENTS

BHI-00601

Rev. C

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 06/29/95	NUMBER ATTENDING 11

## Attendees:

S.K. Demers	T7-05	I.D. Jacques	H6-04	R.G. McCain	H6-02
D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
L.C. Hulstrom	H6-05	K. Kimmel	B1-42	G.E. Van Sickle	H6-05
		A.J. Knepp	H4-85	D.M. Wanek	H4-83

cc: R.G McLeod      H4-83                      M.J. Galgoul                      H6-01

## SUMMARY AND AGREEMENTS

- A discussion on Burial Grounds noted that decisions made in 300-FF-2 could be in conflict with 300-FF-1 decisions. It was agreed that decisions made on the 300-FF-2 Burial Grounds could be revisited if there is conflict with decisions made for the 300-FF-1 Burial Grounds.
- It was agreed that the calculation presented by Tony Knepp be run for the contaminants of concern (hexone, nitrate and uranium) at the 316-4 Crib.
- **Summary of Waste Sites:** The division of waste sites was reviewed and several changes were recommended on the spot. The list will be further discussed at the July 7 meeting. It was agreed that a table listing sites that are now considered non-CERCLA be included in the work plan.
- **Action Item:** Phil Staats to determine if Section 740 or Section 745 applies for the MTCA level C used in Group 9, Step 5.
- **Group 11 Aluminum Recycle Staging Area and Burial Ground West of the Process Trenches:** A presentation (handout attached) was made by Steve Demers on the proposed exposure scenario and potential risk to workers at the aluminum metal shavings area. Signatories agreed to review the handout and provide revisions at the next scheduled meeting (July 7).
- **Group 16 JA Jones #1:** Duane Jacques and Rick McCain provided their recommendations on soil-gas survey and field soil screening. Soil-gas could be used to both locate the paint and determine its depth. A discussion ensued on the cost benefits of various scenarios. The ERC team agreed to obtain aerial photographs of the site when it was active, if at all possible. Through use of the photos and historical information the footprint of the waste area can be determined at less cost than any field survey. A Cost-Benefit Analysis might be important for this site, to include soil-gas survey, geophysics, and excavate and dispose (with field screening broken out for organics and XRF only). It was agreed that there is no opportunity for a no action alternative at this site. It was agreed that the balance of this site will no longer be considered a CERCLA site. The basis for this agreement:
  - recollections of a worker who disposed of paints and can identify a specific area.
  - aerial photographs which will be reviewed for confirmation of placement of the paints and paint cans.

- A rough estimate of \$30K - \$35K for the cost of a soil-gas survey was provided by Duane Jacques. Assumptions include: no radioactivity at the site, a written Description of Work (DOW), probe installation a written report, using field screening levels, based on a 36-point grid, with 15 soil gas samples taken. Leaving probes in place is recommended for confirmational sampling at a later date.
- Rick McCain noted that the field XRF cost is approximately equal to two persons per day.

## GROUP 2 307 Trenches

- Larry provided a review of the data and compiled it into a handout, attached.
- It was agreed that there is enough data to determine an action, however the DQO process was not used to make that determination.
- It was agreed that the criteria to be established in the 300-FF-1 Operable Unit will be followed for this site since it contains soils from the south process pond.
- An action item to review area wells to determine the impact to groundwater from 307 trenches could not separate an impact from the 307 trenches from other known areas of contamination and from the flux in the river stage.
- **Step 2.** change: delete 2. cap in place.
- **Step 3.** will be changed to:
  - Borehole information is contained in document WHC-SD-EN-TI-279.
  - No further data will be required to make a decision
  - No Qualitative Risk Assessment will be performed.
- **Step 5.** will be reworded: Using available data and the criteria established in the 300-FF-1 Operable Unit, if data show that the 307 Trenches are greater than the 300-FF-1 cleanup standards, then those areas will be remediated according to 300-FF-1 decisions.

## Review of the DQO Summary Sheets

The following items are changes to be made to the summary document:

- \* Replace "SAFER" with "observational approach" except for the last agreement bullet in the 06/08/95 minutes.
- \* Change the first bullet under 06/08/95 Agreements to the non-personal: "'It was agreed' that everything we are doing should support the proposed plan."
- \* Group 1 will be deleted from the Operable Unit, since it is an active site.
- \* The Contaminants of Concern will be defined in the DQO document, as opposed to documenting it only in the DOW. The concern with using the DOW for that type of information, is that knowledge could be lost by not documenting it in the work plan or remedial investigation report.
- \* Group 5: delete Bullet 1, Step 3.; Step 5. change to match other burial ground decision rules.
- \* Group 7: change Step 5. Bullet 2: delete "levels", add "for industrial land-use" after "background."
- \* Group 8: create first bullet using the fine print under the description.
- \* Group 9: Remove phosphate from the 06/08/95 minutes and DQO Summary Document; Step 5. - MTCA level C will be used. Phil Staats is to determine if Section 740 or Section 745 applies to this level.

# MEETING AGREEMENTS (Continued)

BHI-00601

Rev. 0

Page 3 of 3

- \* Group 10: Regarding Well 399-3-8, there is concern that it may act as a conduit for contaminant transport. Step 3. Bullet 1 - delete "Obtain" and replace with "Review existing." Step 5. Bullet 1a, replace phrase beginning "transfer" with "announce the availability of the well for others use." Bullet 1b, include after "use," "or if others do not require its use, ". Bullet 2 - replace the rest of the paragraph after "upgradient wells," with " then the well will be abandoned properly."
- \* Group 12 UFO site: Step 5 Bullet 2 - add MTCA level B; change land-use assumption to *Residential*.
- \* Group 18 Pit near Wye Barricade: Change Step 5. to use MTCA level B.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	<i>16 Aug 95</i>
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	<i>8/16/95</i>
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	<i>8/16/95</i>

# MEETING AGREEMENTS

BH1-00601  
Rev. 0

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 07/07/95	NUMBER ATTENDING 11

Attendees:

S.K. DeMers	N3-06	S.K. Johansen	B1-42	J. Rugg	H4-79
D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	R.G. McLeod	H4-83	G.E. Van Sickle	H6-05
L.C. Hulstrom	H6-05			D.M. Wanek	H4-83

cc: K. Kimmel      B1-42

Agenda:

1. Group 14
2. Group 11
3. Group 16
4. Follow up on DQO Summary Document
5. Review and approve meeting minutes

**Group 14: CutUp Oil Dump Site**

- The initial conceptual model (that the contaminated area was approximately 2 sq yards, 12-18 inches deep) was revised based on field activities initiated in June 1995. In actuality, the site is much larger, including a trench, center pit, and south pit, with a much larger contaminated volume than originally thought. In general, the boundary between clean and oil-contaminated soils can be determined visually.
- Analytical results of confirmatory sampling are provided in Attachment #1. The trench and center pit composite samples show PCBs, TPH, and metals all below MTCA method A. The south pit side walls and bottom composite sample has PCBs between 1 and 10 ppm, which exceeds the MTCA method A standard of 1 ppm. TSCA was introduced as a standard that could be invoked for accepting these PCB levels. A discussion on the merits of retaining the MTCA standard over the TSCA standard ensued. **The Tri-Parties agreed to utilize the original criterion of cleanup to MTCA method A standards.** The south pit is a relatively shallow site, and additional excavation will not require shoring. Field screening will be used to determine when contaminated soil is removed and the site is ready for confirmation sampling. Once field screening indicates that contaminated soil has been removed, one composite sample of 4-6 grabs from the walls and bottom of the south pit will be taken and analyzed for PCBs.
- It was agreed that confirmatory sampling and analysis using an SW-846 equivalent method for PCBs will be done on the trench and the center pit. Previous confirmatory samples utilized an immunoassay method for PCB determination, and this method was determined to be inadequate for closure of the site. Three composite samples of 4-6 grabs each will be analyzed for PCBs:
  1. trench walls and bottom
  2. center pit walls
  3. center pit bottom
- Following acceptable confirmatory sampling results, ERC will prepare a short letter report stating what cleanup level was achieved. It was agreed that this letter report will be transmitted to the EPA Regional Administrator as well as Linda Dietz, for entry into WIDS.

- In the DQO Summary, this site is considered a landlord responsibility. In the work plan, Cutup Oil Drum Site will be referred to as "other." It was agreed that the work plan should also state that the site was cleaned up to MTCA method A as a part of landlord responsibilities.

#### Group 11: Aluminum Recycle Staging Area

- Results of the rad survey, presented at a previous DQO meeting, were discussed. An issue was raised by the regulators concerning use of the survey. It appeared that the DQO process was being circumvented because consensus of the decision makers was not obtained for the design of the survey. In the future, ERC agreed to obtain more explicit direction from the Tri-Parties before initiating field activities. The following decisions arose from the discussions:
  - The Tri-Parties agreed to evaluate the ingestion, inhalation and external exposure pathways, since uncertainties exist regarding the risk scenario and associated exposure pathways.
  - The Tri-Parties agreed that additional documentation is required in order to make a decision. The risk assessment will include evaluation of the noted pathways and their risk documented. In addition, the documentation will include an explanation of the input parameters for the calculation.
- No conclusion was reached on whether the data presented in the Rad Survey document is of adequate quality to determine the risk level. Pending the outcome of the revised risk assessment, a determination will be made whether to retain these sites in the scope of the work plan or to delegate them as a DOE landlord activity.
- **Burial Ground Remedial Action Strategy:** The Tri-Parties are currently discussing a site-wide burial ground strategy, including revisiting the assumption that all burial grounds in the 100 and 300 Areas will be excavated. The results of these discussions could impact 300-FF-2. The current approach is limited characterization followed by excavation using the observational approach. The Tri-Parties agreed to retain the current approach for 300-FF-2 burial grounds. It was understood that a strategy to avoid re-issuance of the work plan may be necessary should the approach change.
- **300 Area Fire Station Underground Storage Tank (UST):** The DQO team has not accepted the 300 Area Fire Station Underground Storage Tank contaminated soil as a CERCLA site. This tank, suspected of leaking, was removed and the soil returned as fill. The DOE UST program is requesting that 300-FF-5 monitor the groundwater under the tank area and that the site be accepted in 300-FF-2 as a CERCLA site. DOE agreed to manage this issue internally.
- **Group 16, Site 600-1:** The historians have found two aerial photographs from 1976 and 1983. A portion of the 1976 photo is being enlarged. Both of these photos will be available at the July 13, 1995 meeting.
- Additionally, cost estimates were provided for 600-1 investigations (Attachment #2). The cost estimates for excavation projected by MCASES appeared excessive. It was agreed that GSSC would provide a "back of the envelope" type of estimate and present this information at the next meeting for a more realistic excavation cost.

#### Review of DQO Summary Document

- There are uncertainties regarding how to handle landlord sites in the work plan. Further discussion is necessary.
- Group 9, Site 316-4: There is confusion over the regulation number for MTCA. Phil Staats accepted an action item to provide this information to Larry via cc:mail.
- Group 12, Site 600-22: There is uncertainty over what types of herbicide analyses are available. Larry Hulstrom stated that SW-846 Method 8150 provides results for organic herbicides, including 2,4-D; 2,4-DB; 2,4,5-T; 2,4,5-TP; Dichloroprop; MCPA; MCPP; and others. It is interesting to note that these organic herbicides were not available for use until around 1950. Herbicides used at this site are thought to be pre-Hanford (pre-1943), but this has not been confirmed. The Tri-Parties agreed to analyze the samples for herbicides using SW-846 Method 8150 for organics.



# MEETING AGREEMENTS (Continued)

BH1-00601

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- Group 14, Cutup Oil Drum Site: Delete sentence, "Waste will be designated as investigation derived waste (IDW) until appropriately dispositioned."
- Group 17, Site 600-47: There was some uncertainty regarding the eleven anomalies discovered during GPR work to prepare for the TEDF outfall construction. Further records investigation revealed that six of these anomalies were investigated by using shovel excavation. One site contained fire-cracked rocks and clam shells, which may be of cultural resource significance. Other sites had piles of rocks. One site contained miscellaneous debris, including construction debris, cinderblock fragments, river rock, wire, and tar paper. This site underwent rad and OVM surveys, with no detects. An XRF survey revealed no unusual heavy metals. After examining the six anomalies, TEDF outfall construction proceeded as originally planned. There is no change to the summary document for this site.
- Group 21, Undocumented Waste Site: Bulle 2 on step 5 seems to conflict with subsequent agreements regarding protection of groundwater. This bullet should be replaced with the generic 100-area groundwater approach bullet. In addition, Step 3 bullet 1 should be changed to "visual inspection and sampling..." Dave Einan pointed out that Dennis Faulk has committed to finalize the 100 area protection of groundwater strategy in 2 weeks.
- Group 22: Delete "400 Area Suspected Burial Ground" from the list of sites so that it can be shown individually as Group 23.

## Next Meeting

- The next 300-FF-2 DQO meeting will be Thursday, July 13 at 1:00 p.m.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	16 Aug 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	8/10/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	8/16/95

# MEETING AGREEMENTS

BHI-00601

Rev. 0

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT ERC/300 Area Project	AREA RCHN	SHIFT Day	DATE OF MEETING 07/13/95	NUMBER ATTENDING 9

## Attendees:

D.R. Einan	B5-01	Charlie Johnson	H6-04	Rick McCain	H6-02
M.J. Galgoul	H6-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
Duane Jacques	H6-04	K. Kimmel	B1-42	D.M. Wanek	H4-83

cc: R.G McLeod      H4-83                      L.C. Hulstrom      H6-05                      G.E. Van Sickle      H6-05

Next Meeting - Friday July 21 from 9 am - 1 pm.

## **D&D Discussion**

- 300 Area Fire Station Underground Storage Tank (UST) - Contaminated soil was replaced in the ground. Ecology requires that the soil be remediated. It was agreed that this site is not a CERCLA site.
- 400 Area Concrete Batch Plant - It was agreed that this site defers until D&D activities.

**Group 11** (Aluminum Shavings Areas) risk assessment discussions were deferred until the next meeting.

## **Group 16 600-1 Pit**

- Two photographs were provided: The first photograph was taken one year before dumping; the second photograph was taken several years later with cover. The pictures show the size of the pit and the general area where the paints were disposed can be identified.
- A more detailed excavation cost estimate was provided by the ERC team and discussed. The GSSC reviewed the previous estimate and concurred that the estimate was reasonable. Their review also noted that specific costs were excluded which could increase the estimate by as much as 110%.
- The ERC team provided an estimate which proposed soil-gas and geophysics surveys which were robust enough to allow leaving paint cans in place if no contamination was found. A discussion ensued on how much characterization work should be done prior to excavating.
- The Regulators agreed that field XRF and the OVA can be used to make the decision to excavate or not excavate (a Go or No Go decision). If a No Go decision is made, then confirmatory samples will be taken and sent to the laboratory for analysis. DOE will determine if field screening is sufficient to make a Go decision.
- Revision to DQO Steps: Remove rad as a contaminant of concern from Step 2., Step 3., and Step 5.
- **Step 1. State the Problem** Contaminants of concern may exist in levels within the burial grounds that may pose a risk to the health and safety of the public or the environment in a residential scenario. It was agreed that contaminants of concern are Pb, Cd, Cr, Ba, petroleum distillates (such as naphtha), MEK, alcohols, acetone, toluene, xylene. Mercury was discussed but not included because it would be present in very small amounts as

an insecticide and should not be a contaminant of concern. The listed contaminants of concern are possible constituents of paint and serve as indicators of paint contamination.

- **Step 2. Identify the Decision**
  - Paint cans identified by an EMI survey will be excavated.
  - Do contaminants of concern exceed MTCA level B?
- **Step 3. Inputs** The footprint, as identified in the 1976 photograph, will be surveyed using an EMI or other metal detector survey to identify the suspected paint disposal area, on a (suggested) 20 foot grid, to locate paint cans. Areas that are excavated will use field screening data during excavation to determine when confirmatory sample for laboratory analysis should be taken.
- **Step 4. Boundaries** The footprint of the deepest part of the pit only, as seen in the 1976 photograph.
- **Step 5. Decision Rule** If MTCA level B is exceeded for the listed contaminants of concern, then the material will be excavated and disposed of properly. If paint cans are excavated, then they will be disposed of properly.

**Group 14 CutUp Oil Drum Site:**

- It was agreed that an SW-846 summary package is required for the Cutup Oil Drum Site for confirmatory sample analysis.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	16 Aug 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	8/16/95
U.S. Department of Energy Donna M. Wanek	<i>Donna Wanek</i>	8/16/95

023860

**MEETING AGREEMENTS**

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	08/16/95	10

Attendees:

S.K. Demers	T7-05	G.D. Joyce	H4-86	R.G McLeod	H4-83
D.R. Einan	B5-01	K. Kimmel	B1-42	P.R. Staats	B5-18
M.J. Galgoul	H6-01	A.J. Knepp	H4-85	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

**Summary and Agreements**

- Next meeting is August 29, 1995 from 7:30 am - 12:00 pm.
- 300 Area Proper - Fire Station Underground Storage Tank (UST): Background information was provided on this UST removal. Ecology noted that the data in the closeout report is inadequate for closure. Ecology requested that the CERCLA operable unit decision makers closeout the waste site. Decision makers agreed to accept this site, with the stipulation that interim monitoring will remain an activity for the UST program, and that investigative and/or remedial activities will coincide with destruction of the fire station. It was agreed that no decision rule will be developed at this time.
- Groundwater Protection calculation: Tony Knepp presented the groundwater protection criteria developed for the 100 Area. Although acceptance of this calculation by the 100 Area has not yet been obtained, an interim record of decision should fully define the groundwater protection criteria in the near future.
- It was agreed to revise the industrial scenario used in 300-FF-2 to match the industrial scenario used in the 300-FF-1 Operable Unit:

Industrial Scenario as revised from the 04/11/95 meeting

- \* Protection from further contamination of groundwater
- \* Soil Ingestion
- \* Dermal Contact with Soil
- \* External Exposure to Soil
- \* Inhalation
- \* 30 year duration
- \* 250 days/year
- \* 8 hours/day
- \* External exposure at 1500 hours inside and 500 hours outside per year
- It was agreed to revise the recreational scenario to use 24 hours/day, instead of 8 hours/day.
- It was agreed that unrestricted is equivalent to residential and to state that residential is used to represent unrestricted use. RL took the action to determine if the recreational scenario should be retained for the 300-FF-2 Operable Unit.
- Work Plan Update: Summary tables and full text draft tables to be put into the revised Work Plan were reviewed. Clarification of Table 4-3 was provided: sites listed under the interim remedial measures (IRM) path are sites to be excavated using the observational approach. High Priority LFI sites (phase I) include all activities performed to date. Low Priority LFI sites include all additional sites in the Work Plan (and includes the Cutup Oil Dump

**MEETING AGREEMENTS (Continued)**

023860 of 2

Site.) Table 4-5 was revised for consistency in land-use assumptions. Determine if Tables 3-22 and 3-23 required in the work plan. Review contaminants of potential concern.

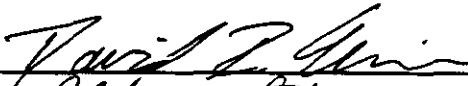


- It was agreed that the "top of the engineered structure" will be defined in the Description of Work.
- The applicable section for the group 9 wastes sites is MTCA 173-340-740.
- RL agreed that a decision to excavate can be made when contaminants are detected using field screening methods.
- It was agreed that inactive and never permitted french drains are CERCLA waste sites. If permitted, then french drains close under the permit and are not considered CERCLA waste sites. ERC will determine which french drains are CERCLA waste sites.
- It was noted that all DQO agreements should be in the work plan.
- Field Activities will be statused using a cc:mail message.

**Group 11 Aluminum Shavings Areas**

- Decision makers reviewed the paper "*Preliminary Risk Evaluation Aluminum Recycle Staging Area and Burial Ground West of Process Trenches*" by John Lowe. The industrial scenario used for the paper did not match the agreed to scenario for 300-FF-2. However, it was agreed to change the industrial scenario used in 300-FF-2 to match the industrial scenario used in the 300-FF-1 Operable Unit. John Lowe was tasked to revise the Receptor Populations paragraph to include the exact numbers plugged into the equations. Clarifications to be included in the revised paper are: 1000 cpm for the dermal particle; external exposure is 1500 hours inside and 500 hours outside per year; external exposure duration is 30 years.
- Dermal contact scenarios were discussed. It was noted that the dermal contact scenario should be agreed to before risk numbers are calculated. The next step would be to apply this risk information to the aluminum shavings areas and provide decision makers with an incremental cancer risk. It was noted that neither RESRAD nor HSRAM has a dermal contact pathway, and that the only work anyone is aware of is the D-Island speck scenario.

**Group 24 300 Area South**

- A new Group was added to the 300-FF-2 Operable Unit, the 300 Area South. A discussion of the boundaries for the 300 Area South ensued. An RL action is to determine the current strategy concerning land-use for this area.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		25 Oct 95
Washington Department of Ecology Phillip R. Staats		11/25/95
U.S. Department of Energy Donna M. Wanek		10/27/95

**MEETING AGREEMENTS**

023861

SUBJECT: 300-FF-2 Operable Unit Work Plan DQO Meeting

TO: Attendees		BUILDING		
FROM: Kay Kimmel - Dames & Moore		CHAIRMAN Donna M. Wanek		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	08/29/95	7

Attendees:

D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Galgoul	H6-01	K. Kimmel	B1-42	D.M. Wanek	H4-83
L.C. Hulstrom	H6-05				

cc: R.G McLeod H4-83

- It was noted that all 400 area french drains are covered by a permit and will be closed by permit.
- It was agreed that further investigation of the In-Situ Vitrification site would be required for this work plan. The action was taken by RL.
- Update on Activities to Locate Well 399-3-8: It was agreed to document the effort to locate the well and to call it a good effort. It was suggested that a letter report would tie the well to the Hanford well book. Ecology requested a copy of the report be sent to Dib Goswami.

**Work Plan:**

- It was agreed to delete Tables 3-22 and 3-23 concerning risk-based screening levels. Clarifications of Summary of Table 4-3, Table 4-7 and Table 4-8 were provided. A discussion was held on the use of "unrestricted" vs. "residential". No clear path was identified.
- It was agreed to remove all recreational land-use and replace it with industrial.
- The work plan will be delivered on Friday as a redline document. The strikeout information will be provided separately. Provide informal review comments before September 14, and meet on the 14th at 7:30 am for informal comment resolution.
- The DQO summary agreement document will be updated and sent to the decision makers to be used as a reference during the review of the work plan.

**Group 11**

- The risk evaluation and possible cleanup scenarios were discussed. It was agreed to leave this site in the operable unit, that based on preliminary investigation this site could be a landlord issue, and that DOE is authorized to move ahead to cleanup the larger areas. All data and investigations to date will be included in the work plan. If possible, the cleaned up areas will be downposted, with remaining areas to be remediated when an appropriate disposal facility is identified.

## MEETING AGREEMENTS (Continued)

BHI-00601

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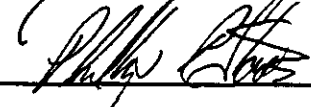

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### Group 3 618-11 and 618-10 Burial Grounds

- It was agreed that the contaminants of concern are the same as those listed in the description of work for well drilling, document BHI-00424 Rev. 0A. Specifically, volatile organic compounds, metals, anions, gross alpha, gross beta, and total uranium are the contaminants of concern for both burial grounds. Protocol was discussed and the ERC agreed that the procedures were in place to collect a sample if contaminants of concern were detected during the drilling process.

### Group 24 300 Area South

- It was agreed to leave this area in the operable unit and to declare it an area that requires no further action. It was further agreed that the 300-FF-2 OU boundary line in the 300 Area would be changed to follow the current 300 Area south fenceline. This also includes showing waste site 300-1 as a distinct point south of the 300 Area.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		25 Oct 95
Washington Department of Ecology Phillip R. Staats		10/25/95
U.S. Department of Energy Donna M. Wanek		10/27/95

**MEETING AGREEMENTS**BH1-00601  
Rev. 0**SUBJECT: 300-FF-2 Operable Unit Work Plan Comment Resolution Meeting**

<b>TO:</b> Attendees		<b>BUILDING</b>		
<b>FROM:</b> Larry Hulstrom - ERC		<b>CHAIRMAN</b> Donna M. Wanek		
<b>DEPARTMENT-OPERATION-COMPONENT</b>	<b>AREA</b>	<b>SHIFT</b>	<b>DATE OF MEETING</b>	<b>NUMBER ATTENDING</b>
ERC/300 Area Project	RCHN	Day	September 26 & 28, 1995	9

**Attendees:**

D.R. Einan	B5-01	G.D. Joyce	H4-86	P.R. Staats	B5-18
M.J. Gulgoul	H6-01	K. Kimmel	B1-42	G.E. Van Sickle	H6-05
L.C. Hulstrom	H6-05	R.G McLeod	H4-83	D.M. Wanek	H4-83

Comment resolution meetings were held on September 26 and 28, 1995 between RL, EPA and Ecology (the Tri-Parties), to discuss the revised 300-FF-2 Operable Unit (OU) Work Plan. The work plan had been revised to address previous EPA and Ecology comments, and to include the outcome of the data quality objective (DQO) process. In general, the agreement was to revise information in Chapters 4 and 5, and retain the content and format of Chapters 1, 2 and 3.

The first three chapters and further comments were discussed during the September 26 meeting. During the course of the September 28 meeting, the discussion centered on the expectations for Chapter 4. The general understanding was that Chapter 4 would reflect DQO decisions and their rationale, and Chapter 5 would include the activities agreed to prior to the DQO process and those from the previous months of negotiation (using the DQO process) between the Tri-Parties. All parties realized that chapters 4 and 5 would be a significant departure from chapters 1, 2, and 3. However, the discontinuity between the first chapters and the latter chapters led to some rethinking of this approach. Chapters 4 and 5 were also written as though there was still field activity to be performed, when in reality, most activities were complete. (Many of the activities were performed in parallel with the DQO process discussions.) This language, along with the need to clearly and concisely reflect the agreements from the DQO sessions led to the following discussion. By applying the Hanford Past Practice Strategy (which uses common sense, and historical and current information), the Tri-Parties could move directly from a draft work plan to a draft limited field investigation report. Key elements in this decision were:

- field work had already been completed (with the exception of Round 2 groundwater sampling)
- extensive modification on the work plan was required to eliminate any discontinuity and to provide clear and concise language
- better use of resources could be employed by writing the investigation report instead of rewriting the draft work plan and then writing the report.

The logistics of this approach were discussed, with the outcome that an NPL agreement form would be required. The investigation report would be made available to the public along with a focus sheet describing the above rationale.

**AGREEMENTS:**

- RL agreed to provide an outline and a detailed schedule for the investigation report at the next meeting.
- It was agreed to retain all pertinent information from the work plan in the LFI report.



# MEETING AGREEMENTS (Continued)

025862  
Page 2 of 2

- It was tentatively agreed that the In-Situ Vitrification site and the 303-M facilities will be included in the investigation report. No field investigations are currently planned as part of the LFI scope. Further discussions within RL are required to make the transition to CERCLA official.
- It was proposed to stop work after issuing the investigation report (e.g., that no feasibility study and no proposed plan would be written) until cost data were available from excavation of the first burial ground in the 300-FF-1 OU.

A tentative meeting was set for October 25 to discuss the outline and the schedule.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan	<i>David R. Einan</i>	25 Oct 95
Washington Department of Ecology Phillip R. Staats	<i>Phillip R. Staats</i>	11/1/95
U.S. Department of Energy Robert G. McLeod	<i>Robert G. McLeod</i>	Oct 25, 1995

**MEETING MINUTES**

BHI-00601

Rev. 0

**SUBJECT: 300-FF-2 Operable Unit Work Plan Comment Resolution Meeting**

TO: Attendees		BUILDING		
FROM: <i>L.C. Hulstrom</i> Larry Hulstrom - ERC		CHAIRMAN Robert G. McLeod		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	October 25, 1995	5

Attendees:

D.R. Einan	B5-01	R.G. McLeod	H4-83
M.J. Galgoul	H9-12	P.R. Staats	B5-18
L.C. Hulstrom	H9-11		

cc: D.M. Wanek H4-83

A meeting was held to discuss the items listed on the attached agenda (Attachment #1). Discussions on the proposed format for the LFI report (Attachment #2) included questions regarding an ecological risk assessment and the appropriate place in the text for such a discussion, inclusion of NEPA and NRDA related language, and how LFI data (especially the second round of groundwater data) would be presented. M. Galgoul took an action to review the approach for the ecological risk assessment.

With regard to the schedule for preparation of the LFI report (Attachment #3) it was agreed that as long as the LFI report was finalized before the end of FY96 the end date was not critical. The regulator review cycle will be changed to reflect a 45 day review cycle rather than 30 day cycle. P. Staats pointed out that as of November 15 a single regulatory agency will have the lead rather than including a support agency role. This implies that Ecology may not be involved with the review of the LFI report when it is issued for regulator review. It was also explained by M. Galgoul that it is the intention of BHI to include data from the second round of groundwater sampling in the LFI report for the DOE and regulator redline review. This schedule may vary slightly depending on coordination with the Sitewide monitoring program sampling schedule but not be later than what was discussed. With the minor changes discussed the proposed schedule was accepted as a point to move forward from.

The draft NPL agreement/change control form to document the cessation of work on the work plan was reviewed. Comments will be incorporated and the form will be routed to the unit managers for approval. Discussions are still ongoing relative to postponing work on the focused feasibility study and proposed plan for 300-FF-2 until after work on excavation of Burial Ground 618-4 in 300-FF-1 is completed. Currently completion of excavation is targeted for the end of FY98. This implies that the LFI report for 300-FF-2 would be completed and no further work would be performed in 300-FF-2 until possibly FY99, unless budgeting scenarios change. It was noted that under the current budgeting scenarios it may be necessary to change the 1999 TPA milestone relative to completion of characterization activities in the 300 Area. This will be addressed in the future.

The format and content of the latest version of the DQO Summary report was briefly discussed. Additional time was given for regulator review. Informal comments are due to BHI on or before November 9, 1995.

Miscellaneous Items:

It was noted that discussions being held for the 300-FF-1 operable unit are currently leaning towards shifting the 618-5 burial ground from 300-FF-1 to the 300-FF-2 operable unit. A TPA Change Request is being discussed as the

## MEETING MINUTES (Continued)

Page 2 of 4




document to formalize this modification. The 618-5 burial ground will then be included in the 300-FF-2 LFI report discussions.

P. Staats mentioned that a letter from D. Wells of Ecology was issued to EPA and RL several weeks ago regarding the Aluminum Recycle Staging Area. BHI requested to receive a copy of the letter.

With the changes to the FY96 scope of 300-FF-2 a change request to the fiscal year work plan will be prepared and submitted to RL. BHI will prepare the change request.

Further actions will be required in order to transition the In-Situ Vitrification site from RCRA to CERCLA.

R. McLeod accepted an action to establish a meeting with appropriate personnel. It was presumed that this transition would require documentation similar to that which was generated for the 303-M building.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		13 Dec 95
Washington Department of Ecology Phillip R. Staats		12/5/95
U.S. Department of Energy Robert G. McLeod		12-5-95

**300-FF-2 Operable Unit**  
**300-FF-2 COMMENT RESOLUTION**  
**AGENDA**

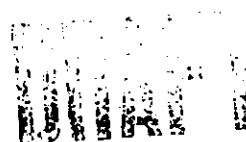
October 25, 1995

8:00 - 12:00, Room 1600, 2440 Stevens Ctr. Pl.

1. Draft LFI Report Format
2. Schedule for LFI Report
3. DQO Summary Report  
DQO Meeting Minutes Approval  
Comments
4. Disposition of the Work Plan  
NPL Agreement/Change Control Form
5. Future of 300-FF-2 After the LFI Report  
Postponement of the FFS and Proposed Plan  
Effect on 1999 TPA Milestone

Activity ID	Activity Description	Original duration	TPCN	Early start	Early finish	1995												1996											
						S	O	N	D									J	J	A	M	J	J	A	S	O			
CHARACTERIZATION - TASK P22130A0A																													
0235	PREPARE DRAFT LFI REPORT	50	P22AG	06NOV95*	19JAN96	06NOV95* 19JAN96																							
0710	LFI DRAFT ERC INTERNAL REVIEW	10	P22AG	22JAN96	02FEB96	22JAN96 02FEB96																							
0715	INCORPORATE ERC COMMENTS & ISSUE DOE DRAFT	20	P22AG	05FEB96	04MAR96	05FEB96 04MAR96																							
0725	CONCURRENT DOE/EPA/ECOLOGY REVIEW	20	P22AG	05MAR96	01APR96	05MAR96 01APR96																							
0730	INCORPORATE COMMENTS & PREPARE REDLINE REV.0	20	P22AG	02APR96	29APR96	02APR96 29APR96																							
0745	DOE & REGULATOR REDLINE REVIEW	10	P22AH	30APR96	13MAY96	30APR96 13MAY96																							
0750	INCORPORATE COMMENTS & ISSUE REV.0	20	P22AH	14MAY96	11JUN96	14MAY96 11JUN96																							
0755	TRANSMIT REV 0 TO DOE-LFI	1	P22AH	12JUN96	12JUN96	12JUN96 12JUN96																							

A-87



Rev. 0  
02/24/96

## **DRAFT**

### **300-FF-2 LFI REPORT OUTLINE**

Note: The original Work Plan Sections are in ( ).

#### **EXECUTIVE SUMMARY**

#### **1.0 INTRODUCTION**

##### **1.1 Purpose and Scope (1.1 - 1.2)**

Discuss decision making process (i.e. DQO process, RCRA/CERCLA coordination, etc). Discuss documentation strategy, i.e. straight to LFI report incorporating work done during DQO discussions. Discuss use of the report to support future decisions. Discuss ARAR's as appropriate and reference Appendix A.

##### **1.2 Operable Unit Background**

###### **1.2.1 OU Description (2.1.1, 2.1.4, 2.1.5)**

Discuss location of OU and relationship to other 300 Area OUs.

###### **1.2.2 OU History (2.1.2, 2.1.3)**

Discuss process knowledge and operational history.

##### **1.3 Report Organization (1.3)**

#### **2.0 PHYSICAL CHARACTERISTICS (2.2)**

Discuss the elements listed below as summaries of existing documentation where applicable and incorporate by reference as much as possible.

##### **2.1 Surface Features**

##### **2.2 Meteorology**

##### **2.3 Surface-Water Hydrology**

##### **2.4 Geology**

##### **2.5 Soils**

## 2.6 Hydrogeology

## 2.7 Demography and Land Use (Reference Future Site Uses Working Group)

## 2.8 Ecology

# 3.0 OPERABLE UNIT INVESTIGATIONS

## 3.1 Summary of Previous Investigations (3.1)

Describe previous and existing monitoring programs and summarize "what has been done" at the operable unit. Introduce contaminants of interest. Incorporate by reference as much as possible.

## 3.2 DQO Process (4.1.1)

Describe the work plan review process, timing and rationale for DQO process decision, re-evaluation of 200 sites, Tables 4-3 and 4-4, waste site groupings, DQO process discussions, DQO summary document, land use assumptions, risk scenario definitions, Contaminants of Potential Concern (COPCs), etc.

## 3.3 LFI Investigations

### 3.3.1 Investigative Approach (4.2, 5.1.3)

Utilize appropriate sections from the work plan to introduce the work scope that was agreed upon either prior to the DQO process (i.e. non-intrusive field surveys) or as a result of the DQO process for each specific waste site or waste site grouping.

### 3.3.2 Results and Conclusions

Present the results of field investigations by waste site or waste site grouping.

## FOR EXAMPLE:

### 3.3.2.1 618-10 Burial Ground Area (Including the 316-4 Crib)

#### 3.3.2.1.1 Historical Information Summary

#### 3.3.2.1.2 Surface Radiation Survey

#### 3.3.2.1.3 Surface Soil Sampling

#### 3.3.2.1.4 Surface Geophysics Survey

#### 3.3.2.1.5 Ecological investigation

#### 3.3.2.1.6 Groundwater sampling

### 3.3.2.2 618-11 Burial Ground Area

#### 3.3.2.1.1 Historical Information Summary

- 3.3.2.2.2 Surface Radiation Survey
- 3.3.2.2.3 Surface Soil Sampling
- 3.3.2.2.4 Surface Geophysics Survey
- 3.3.2.2.5 Ecological investigation
- 3.3.2.2.6 Groundwater sampling

(Continuation for remaining waste sites)

#### 4.0 SITE CONCEPTUAL MODEL (3.2)

Describe exposure scenarios, receptors, etc.. Compare data to remediation goals (MTCA and 15 mrem/yr). Provide a qualitative discussion of potential ecological risks. Reiterate and refine the COPCs listing. Discuss contaminant transport mechanisms.

#### 5.0 SUMMARY AND CONCLUSIONS

##### 5.1 Summary of data evaluation.

##### 5.2 Remediation Approach

Identify the appropriate decision pathways (i.e. IRM, LFI, Final RI/FS) for addressing the COPC. Discuss approach to burial grounds and sites to be addressed by CERCLA in conjunction with D&D and/or RCRA programs. Discuss incorporation of natural resource considerations.

##### 5.3 Potential Remedial Actions

Identify potential remedies to provide a link to future FFS activities, including a proposed schedule.

##### 5.4 Need for Additional Investigations/Monitoring

Identify any data gaps or additional data needs to support current and future decisions (e.g., Completion of 618-4 Burial Ground Removal to support the FFS?, Do we need additional investigation at 316-4 Crib?, how does the interface with RCRA and D&D programs function?) Identify a minimum monitoring plan to support the operable unit considering all the current monitoring programs in place (If required).



## APPENDICES

Appendix A - ARAR's (3.3)

Appendix B - DQO Process (Place additional data here or just reference the summary document?)

Appendix C - Soil Sampling Data

Appendix D - Groundwater Monitoring data

Appendix E - Geophysical Data

Appendix F - Radiation Survey Data

# MEETING MINUTES

BHI-0050  
Rev. 0

SUBJECT: 300-FF-2 Operable Unit Comment Resolution Meeting

TO: Attendees		BUILDING		
FROM: Larry Hulstrom - ERC <i>L. C. Hulstrom</i>		CHAIRMAN Robert G. McLeod		
DEPARTMENT-OPERATION-COMPONENT	AREA	SHIFT	DATE OF MEETING	NUMBER ATTENDING
ERC/300 Area Project	RCHN	Day	December 5, 1995	5

## Attendees:

L.C. Hulstrom	H9-11	R.G. McLeod	H4-83
C.R. Johnson	H4-91	P.R. Staats	B5-18
		D.M. Wanek	H4-83

cc: D.R. Einan      B5-01  
M.J. Galgoul      H9-12

A meeting was held to discuss the items listed on the attached agenda (Attachment #1). Discussions on the format for the DQO Summary report concluded that the document content would be improved if discussions were included regarding the technical information that was discussed for each waste site grouping, ie, such things as groundwater data, photographs that were discovered, geological cross sections, groundwater flow maps, etc. The information will be contained within the project file but should be discussed more fully in the DQO Summary report. Should anyone be interested in the details they could go to the project files. Everyone concurred that the document should remain as a stand-alone document. D. Wanek suggested that the DQO Summary notes that were generated by K. Kimmel during the course of the DQO meetings be included as an appendix to the report. This would be in addition to the approved Meeting Agreements that are to be appended to the document. It was also agreed that the tabular format for documenting the 7 steps of the DQO Process as used in the 200-PO-1 DQO summary report was not necessary in the 300-FF-2 document due to the larger number of sites addressed by 300-FF-2.

The use of existing data for ecological risk assessment was briefly discussed. Existing data can be used for site release on several of the sites to be included within the LFI report (ie., 600-22, etc.), or the ecological risk assessment can be factored in later for sites to undergo either the observational approach, or remedial design stages.

The schedule for the LFI report can be finalized once the TPA Change Control Form is approved at the December IAMIT meeting (Dec. 20, 1995). No one had any further comments on the draft that had been provided via cmail. In the meantime the regulators believed that it should be possible to proceed with finalization of the DQO report without affecting the LFI report. Comments from D. Wanek and D. Einan will be obtained as a followup to this meeting.

As followup to Action Items from the 10/25/95 meeting D. Wanek agreed to provide BHI a copy of the letter from Ecology regarding the Aluminum Recycle Staging Area. BHI is proceeding to finalize the TPA Change Control Form for moving the 618-5 burial ground to the 300-FF-2 OU, and is preparing a FY96 Work Plan Change Request. R. McLeod will pursue setting up a meeting to discuss transition of the ISV site from RCRA to CERCLA.

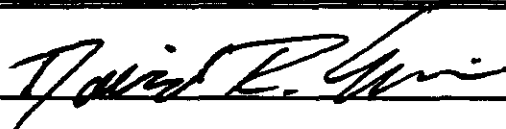
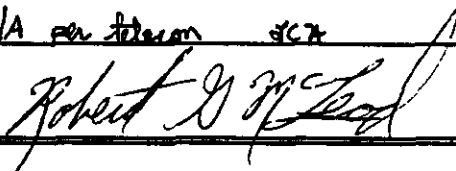
## MEETING MINUTES (Continued)

BHI-00601

Rev. 0

Page 2 of 2

NOTE: As a followup to the December 5 meeting another meeting was held on December 13, 1995 with D. Einan. Attachment #2 is a summary of the comments received and that the discussions that took place at that meeting.

CONCURRENCE	SIGNATURE	DATE
U.S. Environmental Protection Agency David R. Einan		10 Jan 96
Washington Department of Ecology Phillip R. Staats	N/A per telecon JCH	1/12/96
U.S. Department of Energy Robert G. McLeod		Jan 10, 1996

**300-FF-2 Operable Unit  
300-FF-2 COMMENT RESOLUTION  
AGENDA**

**December 5, 1995**

**8:00 - 12:00, Room 1600, 2440 Stevens Ctr. Pl.**

1. **DQO Summary Report**  
Format  
Attachment to LFI vs Standalone Document (See TPA Change Request)  
Meeting Minutes Approval (8/16, 8/29, 9/26&28 completed), 10/25
2. **Disposition of the Work Plan**  
TPA Change Control Form
3. **Draft LFI Report Format**  
Eco Risk - use existing data for 1) site release; 2) possible further work required during remedial design; or 3) possible further work required during observational approach
4. **Schedule for LFI Report**
5. **Future of 300-FF-2 After the LFI Report**  
Postponement of the FFS and Proposed Plan  
Effect on 1999 TPA Milestone
6. **Action Items from 10/25/95 - Status**  
  
TPA Change Control Form for 618-5 to FF2 (BHI)  
Aluminum Recycle Staging Area letter from Ecology (D. Wells) (Ecology)  
FY96 Work Plan Change Request (BHI)  
ISV Site Transition (DOE)

## ATTACHMENT #2

December 13, 1995

**SUBJECT: 300-FF-2 DQO Summary Report Comments from EPA**

A meeting was held today with Dave Einan (EPA), Michael Galgoul (ERC), and Larry Hulstrom (ERC) to discuss EPA comments on the draft DQO Summary Report. This meeting was a followup to the meeting held on December 5, 1995 that Mr. Einan was unable to attend.

The following summarizes those comments that were discussed:

- 1) Section 3.2.2 Site Selection - This section will be moved from the Global Decisions section of text (Section 3.2) and will be inserted as introductory text for waste site groups 22 and 23 since this discussion was specifically applied to only these 2 waste site groups rather than all groups.
- 2) Section 4.3 Group 3 - The last sentence of the third paragraph is unnecessary and should be deleted.
- 3) Section 4.4 Group 4, Step 3. and other groups where this verbiage is used - Change from single bullet into two bullets as follows:
  - Field screening/sampling of excavated material.
  - Confirmation sampling of the footprint to determine completion.
- 4) Section 4.10 Group 10, Step 5. - change the last bullet to reflect the wording originally used and recorded in the 4/19/95 meeting on this subject:
  - If the downgradient wells show elevated total beta as compared to the upgradient wells, well 399-3-8 may pose a risk. This information will be communicated to the appropriate group within D&D and the well will be deferred to D&D.
- 5) Section 4.14 Group 14 - a) check the wording of the second bullet for consistency of tense (i.e., was versus will); b) substitute "Regional Administrator" with "Region X office" in the fourth bullet text.
- 6) Section 4.16 Group 16 - a) change "confident" to "satisfied" in the first paragraph; b) summarize and condense the amount of detail provided in the remaining paragraphs of the discussion section.

7) Section 4.22 Group 22 - a) see comment #1; b) delete the following bulleted item "400 Area Concrete Batch Plant - It was agreed that this site defers until D&D activities". Dave suggested that it was inconsistent to specifically defer this site to D&D when it is no different than the other waste sites in this grouping. All of the sites are 400 Area construction related and will be removed from the scope of the work plan.

8) Section 4.23 Group 23 - see comment #1.

A general comment was made regarding the discussion in each waste site grouping. Text should be added to reflect the fact that a range of discussions/options were held on most waste site groupings during the course of the DQO process. The text presently reflects only those decisions that were reached. Appropriate text will be added to lead-in sections of Chapters 3 and 4 to reflect this comment as well as the general text of Chapter 5.

Based on comments from the December 5 meeting we also discussed the addition of a description of the technical details that were discussed for each waste site grouping. This has been added as a "Summary of Data" section to each waste site grouping where applicable. In addition, a conclusion section will be added for each waste site grouping to summarize the conclusions reached and a general summary table will be added to Chapter 5.

## **APPENDIX B**

### **300-FF-2 WASTE SITES AND THEIR DQO STEPS**





## APPENDIX B 300-FF-2 WASTE SITES AND THEIR DQO STEPS

\* Information follows the small date

### AGREEMENTS:

04/11/95

#### Residential Scenario:

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- Ingestion of Game, Fish and Crops
- 30 year duration
- 365 days/year
- 24 hours/day

#### Industrial Scenario: Redline/strikeout 08/16/95

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- ~~30~~ 20-year duration
- 250 days/year
- 8 hours/day
- ~~External exposure at 1500 hours inside and 500 hours outside per year~~

#### Recreational Scenario: Redline/strikeout 08/16/95

- Protection from further contamination of groundwater
- Soil Ingestion
- Dermal Contact with Soil
- External Exposure to Soil
- Inhalation
- Ingestion of Game and Fish
- 30 year duration
- \* • 7 days/year
- \* • ~~24~~ 8-hours/day

\* The exposure duration parameters were unresolved.

04/25/95

A discussion was held concerning what criteria to use to retain surface sites in the scope of the work plan:

- It was agreed that a site must be inactive.
- It was agreed that a survey for radioactivity would be performed on the inactive site unless existing information indicates the site is non-radioactive:
  - If field screening places a site as a Surface Contamination Area (SCA), then it will be retained in the work plan and further investigation will be conducted to determine risk.
  - If a site does not meet SCA criteria, then it becomes a landlord issue, it is not a CERCLA site, and is removed from the scope of the work plan.

05/17/95

- There was agreement to use the observational approach to excavate and remove burial grounds.

05/24/95

- It was agreed that no baseline risk assessment will be required after excavation using risk-based action levels.

05/31/95

- It was agreed to generate a contaminants of potential concern (COPC) list from historical information and waste acceptance criteria as a product of this DQO. The COC list will be refined from the COPC list during the excavation.
- It was agreed that DQO Step 5 can be stated for sites which defer until D&D.
- It was agreed that for sites using the observational approach to excavation, Step 5 will be changed to include the following: If the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background exposure for the contaminants of concern, then excavation will continue.

06/08/95 Redline 06/29/95

- It was agreed that everything we are doing should support the Proposed Plan. It was agreed that the DQO summary report should capture the decisions made and their rationale so that in the future those decisions can be more easily understood.
- It was agreed that the groundwater protection issue will be decided first in the 100 Area and adopted in 300-FF-2.
- It was agreed that contaminants of concern and their cleanup levels will be provided in the work plan.
- Tri-parties need to agree on the duration of exposure for the recreational scenario.
- Sample design will be decided on during the SAFER decisions made at the remedial design stage.

06/29/95

- The Contaminants of Concern will be defined in the DQO document, as opposed to documenting them only in the DOW. The concern with using the DOW for that type of information, is that knowledge could be lost by not documenting it in the work plan or remedial investigation report.

07/07/95

- **Burial Ground Remedial Action Strategy:** The Tri-Parties are currently discussing a site-wide burial ground strategy, including revisiting the assumption that all burial grounds in the 100 and 300 Areas will be excavated. The results of these discussions could impact 300-FF-2. The current approach is limited characterization followed by excavation using the observational approach. The Tri-Parties agreed to retain the current approach for 300-FF-2 burial grounds. It was understood that a strategy to avoid re-issuance of the work plan may be necessary should the approach change.
- **300 Area Fire Station Underground Storage Tank (UST):** The DQO team has not accepted the 300 Area Fire Station Underground Storage Tank contaminated soil as a CERCLA site. This tank, suspected of leaking, was removed and the soil returned as fill. The DOE UST program is requesting that 300-FF-5 monitor the groundwater under the tank area and that the site be accepted in 300-FF-2 as a CERCLA site. DOE agreed to manage this issue internally. 07/13/95 It was agreed that this site is not a CERCLA site.

08/16/95

- **300 Area Proper - Fire Station Underground Storage Tank (UST):** Background information was provided on this UST removal. Ecology noted that the data in the closeout report is inadequate for closure. Ecology requested that the CERCLA operable unit decision makers closeout the waste site. Decision makers agreed to accept this site, with the stipulation that interim monitoring will remain an activity for the UST program, and that investigative and/or remedial activities will coincide with destruction of the fire station. It was agreed that no decision rule will be developed at this time.

- Groundwater Protection calculation: Tony Knepp presented the groundwater protection criteria developed for the 100 Area. Although acceptance of this calculation by the 100 Area has not yet been obtained, an interim record of decision should fully define the groundwater protection criteria in the near future.

- It was agreed to revise the industrial scenario used in 300-PF-2 to match the industrial scenario used in the 300-PF-1 Operable Unit, see above.
- It was agreed to revise the recreational scenario to use 24 hours/day, instead of 8 hours/day.
- It was agreed that unrestricted is equivalent to residential and to state that residential is used to represent unrestricted use. RL took the action to determine if the recreational scenario should be retained for the 300-PF-2 Operable Unit.

- Work Plan Update: Summary tables and full text draft tables to be put into the revised Work Plan were reviewed. Clarification of Table 4-3 was provided; sites listed under the interim remedial measures (IRM) path are sites to be excavated using the observational approach. High Priority LFI sites (phase I) include all activities performed to date. Low Priority LFI sites include all additional sites in the Work Plan (and includes the Camp Oil Dump Site.) Table 4-5 was revised for consistency in land-use assumptions. Determine if Tables 3-22 and 3-23 required in the work plan. Review contaminants of potential concern.
- The applicable section for the group 9 wastes sites is MTC 173-340-740.
- It was agreed that the "top of the engineered structure" will be defined in the Description of Work.

- RL agreed that a decision to excavate can be made when contaminants are detected using field screening methods.
- It was agreed that inactive and never permitted french drains are CERCLA waste sites. If permitted, then french drains close under the permit and are not considered CERCLA waste sites.
- EBC will determine which french drains are CERCLA waste sites.
- It was noted that all DQO agreements should be in the work plan.
- Field Activities will be statused using a cc mail message.

- It was noted that all 400 area french drains are covered by a permit and will be closed by permit.
- It was agreed that further investigation of the In-Situ Vittrification site would be required for this work plan. The action was taken by RL.
- Update on Activities to Locate Well 399-3-8: It was agreed to document the effort to locate the well and to call it a good effort. It was suggested that a letter report would tie the well to the Hanford well book. Ecology requested a copy of the report be sent to DIB Goewann.

#### Work Plan Items:

- It was agreed to delete Tables 3-22 and 3-23 concerning risk-based screening levels.
- Clarifications of Summary of Table 4-3, Table 4-7 and Table 4-8 were provided. A discussion was held on the use of "unrestricted" vs. "residential". No clear path was identified.
- It was agreed to remove all recreational land-use and replace it with industrial.
- The work plan will be delivered on Friday as a redline document. The strikeout information will be provided separately. Provide informal review comments before September 14, and meet on the 14th at 7:30 am for informal comment resolution.
- The DQO summary agreement document will be updated and sent to the decision makers to be used as a reference during the review of the work plan.

\*\*\*\*\*

#### Group 1 Ashes Substation Oil/Water Separator and Dry Well

04/25/95 Redline/Strikeout 06/29/95

Deleted from the scope of work Operable Unit.

\*\*\*\*\*

Group 2 307 Retention Basins, 307 Trenches

04/25/95

*Assumptions - industrial*

06/29/95

- It was agreed that there is enough data to determine an action, however the DQO process was not used to make that determination.
- It was agreed that the criteria to be established in the 300-FF-1 Operable Unit will be followed for this site since it contains soils from the south process pond.
- An action item to review area wells to determine the impact to groundwater from 307 trenches could not separate an impact from the 307 trenches from other known areas of contamination and from the flux in the river stage.

04/25/95

**Step 1. State the Problem**

- Leaving materials in place at the 307 Trenches may pose a risk to worker safety, and may pose a risk to groundwater.
- The 307 Retention Basins are active waste sites, so do not meet the criteria for retaining sites in the work scope. These basins will be deleted from the scope of the work plan and deferred until D&D of the 300 Area buildings. 05/02/95 Added: 307 Retention Basins will be moved to waste Group 13, which includes the sewer lines.

**Step 2. Identify the Decision**

The decision will be one of the following:

1. Leave material in place.
2. ~~cap in place.~~ 06/29/95 Strikeout
3. excavate to eliminate potential risk or potential impact.
4. combination of above.

**Step 3. Identify the Inputs to the Decision**

- 06/29/95 Strikeout/Redline For industrial risk assessment, the input will be a QRA that becomes a driver for an action at an ICR of  $1 \times 10^{-5}$  or a Hazard Quotient of 1.
- Borehole information is contained in document WHC-SD-EN-TI-279.
- No further data will be required to make a decision
- No Qualitative Risk Assessment will be performed.
- Groundwater protection criteria still pending.

**Step 4. Define the Study Boundaries**

The 307 Trenches area is defined by boundary markers. Soils in the vicinity of each site have been sampled as part of the 300-FF-1 operable unit characterization.

06/29/95

**Step 5.**

- Using available data and the criteria established in the 300-FF-1 Operable Unit, if data show that the 307 Trenches are greater than the 300-FF-1 cleanup standards, then those areas will be remediated according to 300-FF-1 decisions.

\*\*\*\*\*

Group 3 618-10 & 618-11 Burial Grounds and Associated UPR's (1-10)

05/09/95

*Assumptions - Industrial scenario (618-11 burial ground and related UPR's); Recreational scenario but with comparisons to a range of alternatives (618-10 burial ground and related UPR's)*

- Locate one new well to monitor the 618-11 burial ground; identify which well(s) to monitor the 618-10 burial ground. Frequency of monitoring to be determined. Analyte list and monitoring strategy to be added here- maybe also include the expected deliverable for this project?
- It was agreed that burial ground contents would not be removed until repackaging, storage and disposal facilities for the waste are available. It is anticipated that over the course of the next ten years there will continue to be no WRAP II or WIPP facility for packaging and disposal of the transuranic wastes contained in the 618-10 and 618-11 Burial Grounds.

05/24/95

- This data gathering activity is outside the scope of the DQO process. No decisions are to be made using this data at this time. No data quality requirements will be established. The purpose for monitoring the groundwater downgradient of the 618-10 and 618-11 Burial Grounds is to determine if any contaminants are leaching from these burial grounds. This monitoring activity is to demonstrate accountability to the public: there is a potential problem and we are monitoring for any contaminants leaching into the groundwater.

08/29/95

- It was agreed that the contaminants of concern are the same as those listed in the description of work for well drilling, document BHI-00424 Rev. 0A. Specifically, volatile organic compounds, metals, anions, gross alpha, gross beta, and total uranium are the contaminants of concern for both burial grounds. Protocol was discussed and the ERC agreed that the procedures were in place to collect a sample if contaminants of concern were detected during the drilling process.

\*\*\*\*\*

Group 4 618-1, 618-2, 618-3, UPR-300-14 (release near 618-1 BG), 303-M Uranium Oxide Facility, and 303-M Storage Area.

05/09/95

*Assumptions - Industrial scenario; excavation and removal (618-2 & 618-3); 618-1, UPR-300-14, the 303-M Uranium Oxide Facility, and the 303-M Storage Area will be deferred until 300 Area D&D activities.*

- Burial Ground 618-1, UPR-300-14, 303-M Storage Area, and 303-M Uranium Oxide Facility will be deferred until D&D activities.

#### Step 1. State the Problem

- Burial grounds pose a risk to human health and the environment and will be removed06/29/95  
Redline using the observational approach.

#### Step 2. Identify the Decision

- Remove the material in the footprint of the burial grounds until the risk is eliminated.

#### Step 3. Identify the Inputs to the Decision

Field screening/sampling of excavated material and of footprint to determine completion.

#### Step 4. Define the Study Boundaries

The footprint of the burial grounds and soils directly beneath.

#### Step 5. Develop the Decision Rule

Using the observational approach, if the soil below the excavated material exceeds MTCA Method C levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

\*\*\*\*\*

Group 5 618-7 Burial Ground

05/10/95

*Assumptions - Industrial scenario*, excavation and removal unless risk assessment judges cap and/or monitoring to be preferred

**Step 1. State the Problem**

- This site may pose a risk to groundwater.
- This site may pose a risk to workers.

**Step 2. Identify the Decision**

It was agreed to remove the burial ground.

**Step 3. Identify the Inputs to the Decision**

- ~~Data from Wells 399-8 5A, B, and C will be reviewed (need purpose of review)~~ deleted bullet 06/29/95.
- No further data is required. Assumption at this point is that this site will be excavated. The regulations will determine the cleanup levels for the contaminants.
- Field screening/sampling of excavated material and of footprint to determine completion.

**Step 4. Define the Study Boundaries**

The footprint of the burial grounds and soils directly beneath.

**Step 5. Develop the Decision Rule**

Using the observational approach, if the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

\*\*\*\*\*

Group 6 UPR-600-22 (600-21 (Windrow Site))

04/25/95

*Assumption - Industrial land-use*

Based on the agreed-to criteria for retaining surface sites, this site will be removed from the scope of the work plan. This site will be closed out when the 618-11 site is closed out.

\*\*\*\*\*

Group 7 618-13 Burial Ground (Mound)

05/10/95

*Assumptions - industrial, excavate and remove*

06/07/95

- It was agreed that XRF field screening and beta-gamma field screening would be used at the mound.

06/08/95

- It was agreed to defer the confirmatory sampling strategy for the mound until the sampling and analysis plan is written, since work is not expected to commence within the next year.

05/10/95

**Step 1. State the Problem**

The site may pose a risk from radioactivity and metals to workers.

**Step 2. Identify the Decision**

Can this site be released for any use?

### Step 3. Identify the Inputs to the Decision

Provide a statistical number of samples needed for representativeness.

05/24/95

- Field screening/analytical data to determine final disposition of excavated material.

#### Remedial Design considerations

- Each loader bucket will be field screened.
- Confirmation samples will be sent to a laboratory to confirm the field screening. Statistician to determine how many samples are required.
- Excavation will continue with screening up to a depth of 1 foot below grade.

05/10/95

### Step 4. Define the Study Boundaries

The soils in the area of the mound and 20 feet around the mound will be surveyed.

05/24/95

### Step 5. Develop the Decision Rule

- If the excavated material field screens below the regulatory limits, then it will be separated from the contaminated material. Soil will be maintained in an industrial area.
- 06/29/95 R/S If levels for contaminants of concern exceed MTCA levels or 15 mrem/yr above background for industrial land use at 1 foot below grade, then the site will be reevaluated.

\*\*\*\*\*

Group 8 Burial Ground West of the Process Trenches [moves to Group 11], Undoc. Solid Waste Burial Ground (near 618-8), 618-8 Burial Grounds, Solid Waste Burial Ground (Early BG).

05/09/95

#### Assumptions - industrial

- The Early Burial Ground could not be located, so was deleted from work scope. 05/10/95  
However it will be included in the remedial investigation report for completeness
- This group now contains only the 618-8 and Undocumented Solid Waste Burial Ground. They are deferred until D&D since the parking lot over the 618-8 BG is in use.

### Step 1. State the Problem

Burial Grounds pose a risk to human health and the environment.

### Step 2. Identify the Decision

Burial grounds will be excavated until the risk is eliminated.

### Step 3. Identify the Inputs to the Decision

Field screening/sampling of excavated material and of footprint to determine completion.

### Step 4. Define the Study Boundaries

- The Undocumented Solid Waste Burial Ground (near 618-8) is defined by surface geophysics surveys, and contains scattered surface debris.
- The 618-8 Burial Ground is defined by boundary markers, drawings and surface geophysics surveys.

### Step 5. Develop the Decision Rule

Using the observational approach, if the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background for the contaminants of concern, then excavation will continue.

\*\*\*\*\*

Group 9 316-4 Crib

04/25/95

*Assumptions - recreational but compare to a range of alternatives*

06/08/95

- 06/29/95 R/S It was agreed that the contaminants of concern are uranium, hexone, and nitrate and phosphate. Risk-based action levels for closure must be calculated.
- Cleanup levels for uranium could be as low as 3-6 pCi/g in order to be protective of groundwater. This number is 100 times the proposed Maximum Contaminant Level (MCL). However, as noted above, it was agreed that the groundwater protection issue will be decided first in the 100 Areas and adopted in 300-FF-2.
- Past experience with similar sites indicates the contamination is concentrated directly below the crib and is assumed to be within the first 5 feet.
- The issue of protecting groundwater is the driving force for cleaning up this site.

05/03/95

**Step 1. State the Problem**

- Do the soils at this site pose a risk to human health or the environment due to the release of radioactive contaminants?
- Does this site pose a risk to groundwater?

04/25/95

**Step 2. Identify the Decision**

06/29/95 Strikeout ~~The decision will be one of the following:~~

- ~~1. Leave material in place.~~
- ~~2. cap in place.~~
- ~~3. excavate to eliminate potential risk or potential impact.~~
- ~~4. combination of above.~~

06/08/95

Excavate using the observational approach to a depth of 15 feet below the top of the engineered structure.

04/25/95

**Step 3. Identify the Inputs to the Decision**

Copies of the Karl Fecht and Bruce Ford letter report and PNL 2557.

**Step 4. Define the Study Boundaries**

05/03/95

Soils directly beneath the crib with some lateral extension.

**Step 5. Develop the Decision Rule**

06/08/95

- ~~• Tentatively: If  $> 15$  mrem/yr above background or exceed MTCA, then excavate to 15' below the top of the engineered structure. (RL to clarify their position on the 15' depth.)~~
- ~~• Tentatively: If modeling indicates that MCL would be exceeded in the groundwater, then remedial alternatives will be investigated.~~
- ~~• It was agreed that the proposed maximum contaminant level (MCL) of 30 pCi/L for uranium would be the cleanup criterion applied to the groundwater at the 316-4 crib.~~
- ~~• If the soil below the excavated material exceeds MTCA levels or 15 mrem/yr above background exposure for the Contaminants of Concern, then excavation will continue.~~
- 06/29/95 R/S Using the observational approach, if the soil below the excavated material exceeds MTCA method levels (B or C) C or 15 mrem/yr above background exposure for the contaminants of concern, then excavation will continue up to 15 feet below the top of the engineered structure. (The applicable section for Group 9 wastes sites is MTCA 173-340-740.)



- If contamination exceeds risk levels at 15 feet below the top of the engineered structure, then contaminant distribution and feasibility of continued excavation will be reevaluated.
- If groundwater protection criteria are exceeded after excavation to 15 feet below the top of the engineered structure, then the site will be reevaluated.

\*\*\*\*\*

Group 10 UPR-300-1 (340 Complex, 399-3-8)

04/19/95

*Assumptions - industrial*

- It was agreed that wells 399-3-12, 399-3-11, 399-3-3, and 399-3-7 would provide the current groundwater data.

**Step 1. State the Problem**

The location and status of the 399-3-8 well is uncertain. A risk to groundwater may exist if the well was not abandoned properly. In order to assess the risk, some investigation must be done.

**Step 2. Identify the Decision**

Does well 399-3-8 act as a conduit and pose a risk to groundwater?

**Step 3. Identify the Inputs to the Decision**

- 06/29/95 R/S ~~Obtain~~ Review existing gross beta, cesium-137 and strontium-90 data in surrounding monitoring wells 399-3-12, 399-3-11, 399-3-7 and 399-3-3.
- Obtain geophysical data of the site to determine the location of the well.

**Step 4. Define the Study Boundaries**

The area south of the 340 Building where the release occurred defines the site boundaries. UPR-300-2 and UPR-300-11 occurred in the same general vicinity.

**Step 5. Develop the Decision Rule**

06/29/95 R/S

- If geophysics finds the well, then excavate and evaluate fitness-for-use.
  - If well 399-3-8 is fit for use, then ~~transfer it to the 300 FF 5 Operable Unit for use or integrate it into the groundwater monitoring program~~ announce the availability of the well for others use.
  - If well 399-3-8 is not fit for use, ~~or if others do not require its use,~~ then abandon properly.
- If the downgradient wells show elevated total beta as compared to the upgradient wells, ~~well 399-3-8 may pose a risk. This information will be communicated to the appropriate group within D&D and the well will be deferred to D&D then the well will be abandoned properly.~~

\*\*\*\*\*

Group 11 Aluminum Recycle Staging Area and [added 05/09/95] Burial Ground West of the Process Trenches

04/17/95

*Assumptions - industrial*

07/07/95

- Results of the rad survey, presented at a previous DQO meeting, were discussed. An issue was raised by the regulators concerning use of the survey. It appeared that the DQO process was being circumvented because consensus of the decision makers was not obtained for the design of

the survey. In the future, ERC agreed to obtain more explicit direction from the Tri-Parties before initiating field activities. The following decisions arose from the discussions:

- The Tri-Parties agreed to evaluate the ingestion, inhalation and external exposure pathways, since uncertainties exist regarding the risk scenario and associated exposure pathways.
- The Tri-Parties agreed that additional documentation is required in order to make a decision. The risk assessment will include evaluation of the noted pathways and their risk documented. In addition, the documentation will include an explanation of the input parameters for the calculation.

No conclusion was reached on whether the data presented in the Rad Survey document is of adequate quality to determine the risk level. Pending the outcome of the revised risk assessment, a determination will be made whether to retain these sites in the scope of the work plan or to delegate them as a DOE landlord activity.

08/16/95

- Decision makers reviewed the paper "*Preliminary Risk Evaluation Aluminum Recycle Staging Area and Burial Ground West of Process Trenches*" by John Lowe. The industrial scenario used for the paper did not match the agreed-to scenario for 300-PF-2. However, it was agreed to change the industrial scenario used in 300-PF-2 to match the industrial scenario used in the 300-PF-1 Operable Unit. John Lowe was tasked to revise the Receptor Populations paragraph to include the exact numbers plugged into the equations. Clarifications to be included in the revised paper are: 1000 cpm for the dermal particle; external exposure is 1500 hours inside and 500 hours outside per year; external exposure duration is 30 years.
- Dermal contact scenarios were discussed. It was noted that the dermal contact scenario should be agreed to before risk numbers are calculated. The next step would be to apply this risk information to the aluminum shavings areas and provide decision makers with an incremental cancer risk. It was noted that neither RESRAD nor HSRAM has a dermal contact pathway, and that the only work anyone is aware of is the D-Island speck scenario.

08/29/95

- The risk evaluation and possible cleanup scenarios were discussed. It was agreed to leave this site in the operable unit, that based on preliminary investigation this site could be a landlord issue, and that DOE is authorized to move ahead to cleanup the larger areas. All data and investigations to date will be included in the work plan. If possible, the cleaned up areas will be downposted, with remaining areas to be remediated when an appropriate disposal facility is identified.

04/17/95

### Step 1. State the Problem

- Leaving metal shavings in place could pose a radiological risk to workers.
- Leaving metal shavings in place could pose a risk of spreading the radiological contamination to the public.

### Step 2. Identify the Decision

At what radiation level does this area pose a risk to human health? Do we exceed an exposure of 15 mrem per year above background?

### Step 3. Identify the Inputs to the Decision

Risk Assessors will provide a risk number for radioactivity dose that will be the action level based upon 15 mrem greater than background and the agreed upon land use scenario. Any levels above that number will require remedial action.

#### Step 4. Define the Study Boundaries

- The areas of concern north of the 300 Area are denoted by Surface Contamination Area signs that are posted on chains strung around the areas.
- The Burial Ground West of the Process Trenches has a visually well defined boundary.

#### Step 5. ??

\*\*\*\*\*

#### Group 12 600-22 (UFO Site)

06/29/95

*Assumption - ~~Residential Agricultural land use with comparison to Industrial land use~~*

05/31/95

- John Lowe has been tasked with determining risk levels for herbicides at the UFO Landing Site.

07/07/95

- There is uncertainty over what types of herbicide analyses are available. Larry Hulstrom stated that SW-846 Method 8150 provides results for organic herbicides, including 2,4-D; 2,4-DB; 2,4,5-T; 2,4,5-TP; Dichloroprop; MCPA; MCPP; and others. It is interesting to note that these organic herbicides were not available for use until around 1950. Herbicides used at this site are thought to be pre-Hanford (pre-1943), but this has not been confirmed. The Tri-Parties agreed to analyze the samples for herbicides using SW-846 Method 8150 for organics.

04/11/95

#### Step 1. State the Problem

Radiological contamination, unexploded ordnance and herbicide may pose a potential risk to the health and safety of the public or the environment.

#### Step 2. Identify the Decision

- Do herbicide residues exist in high enough levels to pose risk?
- Do ordnance chemical residues exist at high enough levels to pose risk?
- Is there unexploded ordnance?
- Is there any radiological risk posed by this site?

#### Step 3. Identify the Inputs to the Decision

- Decision makers requested the opportunity to review the new ordnance information and the ecological survey.
- ~~Aerial rad survey information must be provided~~
- Verify herbicide data

04/17/95 ~~The following 3 bullets were moved from Step 4:~~

- The results of a flyover by EG&G in June 1988 were provided. No radioactivity was detected at the 600-22 site, however, this information did not meet the level of confidence for deciding not to require further field information.
- The results of an ecological survey were provided (BHI-00170 Revision 00). This information did not meet the level of confidence for deciding not to require further field information.
- Two samples and their duplicates will be taken from the scarred area: one from the center and one from the tip of a spoke. The purpose of the samples is to verify the presence or absence of herbicide by analytical methods and radioactivity using gross alpha and gross beta analyses.

#### Step 4. Define the Study Boundaries

The site is approximately .25 square miles in size, one mile west of the 300 Area, and is concerned with the surface only.

04/17/95

#### 5. Develop the Decision Rule:

- If gross alpha or gross beta are detected at greater than 15 mrem/year over background, then further information will be collected. Background is as defined in the 300-FF-1 Phase I Remedial Investigation report.
- 06/29/95 R/S If herbicides are found above ~~the determined~~ MTCA method B, then further investigation will be required.

05/02/95

- It was agreed that a full CLP package will be required on the UFO Landing Site samples taken for this work plan. No data validation will be performed.

05/31/95

- If herbicides, gross alpha and gross beta are below action levels as determined by sample analysis, then no risk assessment will be required.

\*\*\*\*\*

Group 13 618-6 Burial Ground, 300 Area RLWS & 340 Bldg. Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System, 05/02/95 Added: 307 Retention Basins.

04/11/95

*Assumption - Industrial land-use*

- There is no problem to state on the sewer lines because D&D will remediate the sewer lines. Any CERCLA decisions will be deferred until ~~after~~ D&D.
- Original 618-6 burial ground location is deferred to when the 300 Area buildings are addressed. The burial ground contents were eventually moved to 618-10 and will be considered as part of that site.
- No further action is required for this group (618-6 Burial Ground, 300 Area RLWS & 340 Bldg Complex, 300 Area Retired RLWS, 300 Area Process Sewer System, 300 Area Sanitary Sewer System), 307 Retention Basins because each site will be addressed when the balance of the 300 Area (i.e., when the buildings) will be addressed. The rationale to postpone activity at these waste sites is that changes could occur and a one-time data collection effort is preferred.

\*\*\*\*\*

Group 14 Cutup Oil Drum Site

04/11/95

*Assumption - Unrestricted land-use*

This is a housekeeping step, discolored soil will be removed and disposed as appropriate. Additional debris would be disposed appropriately. Remaining soil will be less than MTCA method A values. 07/07/95 Strikeout ~~Waste will be designated as investigation derived waste (IDW) until appropriately dispositioned.~~

07/07/95

- The initial conceptual model (that the contaminated area was approximately 2 square yards, 12-18 inches deep) was revised based on field activities initiated in June 1995. In actuality, the site is much larger, including a trench, center pit, and south pit, with a much larger contaminated

volume than originally thought. In general, the boundary between clean and oil-contaminated soils can be determined visually.

- Analytical results of confirmatory sampling are provided in Attachment #1. The trench and center pit composite samples show PCBs, TPH, and metals all below MTCA method A. The south pit side walls and bottom composite sample has PCBs between 1 and 10 ppm, which exceeds the MTCA method A standard of 1 ppm. TSCA was introduced as a standard that could be invoked for accepting these PCB levels. A discussion on the merits of retaining the MTCA standard over the TSCA standard ensued. **The Tri-Parties agreed to utilize the original criterion of cleanup to MTCA method A standards.** The south pit is a relatively shallow site, and additional excavation will not require shoring. Field screening will be used to determine when contaminated soil is removed and the site is ready for confirmation sampling. Once field screening indicates that contaminated soil has been removed, one composite sample of 4-6 grabs from the walls and bottom of the south pit will be taken and analyzed for PCBs.
- It was agreed that confirmatory sampling and analysis using an SW-846 equivalent method for PCBs will be done on the trench and the center pit. Previous confirmatory samples utilized an immunoassay method for PCB determination, and this method was determined to be inadequate for closure of the site. Three composite samples of 4-6 grabs each will be analyzed for PCBs:
  1. trench walls and bottom
  2. center pit walls
  3. center pit bottom
- Following acceptable confirmatory sampling results, ERC will prepare a short letter report stating what cleanup level was achieved. It was agreed that this letter report will be transmitted to the EPA Regional Administrator as well as Linda Dietz, for entry into WIDS.
- In the DQO Summary, this site is considered a landlord responsibility. In the work plan, Cutup Oil Drum Site will be referred to as "other." It was agreed that the work plan should also state that the site was cleaned up to MTCA method A as a part of landlord responsibilities.

07/13/95

- It was agreed that an SW-846 summary package is required for the Cutup Oil Drum Site for confirmatory sample analysis.

\*\*\*\*\*

#### Group 15 618-9 Burial Ground

05/19/95

*Assumptions - Whatever was assumed during the Expedited Response Action (ERA)*

There is no problem here as the site has been cleaned. It will still be considered in the Record of Decision for the 300-FF-2 Operable Unit.

\*\*\*\*\*

#### Group 16 600-1 (Pit north of 300 Area), JA Jones #1 (Pit north of 300 Area), UPR-600-11 (assoc. w/ 600-1 & JA Jones #1)

04/11/95

*Assumption - Unrestricted land-use*

07/13/95 Moved from Step 3.

- It was agreed that no radiation survey is required at this point, we are confident that the earlier discovered radioactive material was completely removed.

05/31/95

- Further historical information was provided on GROUP 16, 600-1 pit. A specific portion of the pit is noted as the most likely area to locate the paints. Truckloads of paint cans were dumped, and paints and solvents were spilled. The following approach was discussed, and **will be**

**discussed further at the next meeting:** Geophysics will be used to locate the cans; Soil gas survey over the marked area only; One test pit will be placed where geophysics and soil gas survey indicate there is paint.

07/07/95

- The historians have found two aerial photographs from 1976 and 1983. A portion of the 1976 photo is being enlarged. Both of these photos will be available at the July 13, 1995 meeting.
- Additionally, cost estimates were provided for 600-1 investigations (Attachment #2). The cost estimates for excavation projected by MCASES appeared excessive. It was agreed that GSSC would provide a "back of the envelope" type of estimate and present this information at the next meeting for a more realistic excavation cost.

07/13/95

- Two photographs were provided: The first photograph was taken one year before dumping; the second photograph was taken several years later with cover. The pictures show the size of the pit and the general area where the paints were disposed can be identified.
- A more detailed excavation cost estimate was provided by the ERC team and discussed. The GSSC reviewed the previous estimate and concurred that the estimate was reasonable. Their review also noted that specific costs were excluded which could increase the estimate by as much as 110%.
- The ERC team provided an estimate which proposed soil-gas and geophysics surveys which were robust enough to allow leaving paint cans in place if no contamination was found. A discussion ensued on how much characterization work should be done prior to excavating.
- The Regulators agreed that field XRF and the OVA can be used to make the decision to excavate or not excavate (a Go or No Go decision). If a No Go decision is made, then confirmatory samples will be taken and sent to the laboratory for analysis. DOE will determine if field screening is sufficient to make a Go decision.

05/24/95; Revised 07/13/95

#### **Step 1. State the Problem**

- May pose ~~radiological and~~ chemical risk to the public.
- Contaminants of concern may exist in levels within the burial grounds that may pose a risk to the health and safety of the public or the environment in a residential scenario. It was agreed that contaminants of concern are Pb, Cd, Cr, Ba, petroleum distillates (such as naphtha), MEK, alcohols, acetone, toluene, xylene. Mercury was discussed but not included because it would be present in very small amounts as an insecticide and should not be a contaminant of concern. The listed contaminants of concern are possible constituents of paint and serve as indicators of paint contamination.

#### **Step 2. Identify the Decision**

- ~~radioactive contamination pose a risk to the public or environment?~~
- Does contamination from discarded paint pose a risk to the public or environment?
- Paint cans identified by an EMI survey will be excavated.
- Do contaminants of concern exceed MTCA method B?

#### **Step 3. Identify the Inputs to the Decision**

- The footprint, as identified in the 1976 photograph, will be surveyed using an EMI or other metal detector survey to identify the suspected paint disposal area, on a (suggested) 20-ft grid, to locate paint cans. Areas that are excavated will use field screening data during excavation to determine when confirmatory samples for laboratory analysis should be taken.

04/11/95

#### **Step 4. Define the Study Boundaries**

- The berm around the depression defines the boundary of the site.

- The footprint of the deepest part of the pit only, as seen in the 1976 photograph.

#### Step 5. Develop the Decision Rule

- If ~~radiochemical and~~ chemical contamination does not cause a risk, stabilize the area.
- If MTCA method B is exceeded for the listed contaminants of concern, then the material will be excavated and disposed of properly. If paint cans are excavated, then they will be disposed of properly.

\*\*\*\*\*

#### Group 17 600-47 (Debris north of 300 Area)

04/19/95

*Assumptions - industrial*

05/24/95

- One of the SCAs had more contamination in the soil than could be readily removed. More detail will be required on this site. It was agreed that the horizontal extent is well enough defined, although not the vertical extent.
- BHI was tasked to immediately research the eleven anomalies from the TEDF outfall to determine if these contain buried waste. If there is the possibility that any one site contains buried waste, it will be added to the scope of the work plan.

07/07/95

- Group 17, Site 600-47: There was some uncertainty regarding the eleven anomalies discovered during GPR work to prepare for the TEDF outfall construction. Further records investigation revealed that six of these anomalies were investigated by using shovel excavation. One site contained fire-cracked rocks and clam shells, which may be of cultural resource significance. Other sites had piles of rocks. One site contained miscellaneous debris, including construction debris, cinderblock fragments, river rock, wire, and tar paper. This site underwent rad and OVM surveys, with no detects. An XRF survey revealed no unusual heavy metals. After examining the six anomalies, TEDF outfall construction proceeded as originally planned. There is no change to the summary document for this site.

#### Step 1. State the Problem

The Soil Contamination Areas (SCAs) may pose a risk to human health and the environment.

#### Step 2. Identify the Decision

- Use the observational approach to excavate the contaminated material and remove to a licensed landfill.
- Material will be screened to determine if it needs to be removed.

#### Step 3. Identify the Inputs to the Decision

- Walkover survey for surface radiation to establish areas for geophysical surveys.
- No surface sampling is required.

#### Step 4. Define the Study Boundaries

The footprint of the marked SCA and the soils directly beneath.

#### Step 5. Develop the Decision Rule

Using the observational approach, if contaminants of concern exceed MTCA Method C, 15 mrem/yr above background exposure, or other risk-based concentrations, then continue excavation.

\*\*\*\*\*

Group 18 600-23 (Pit near Wye Barricade)

04/17/95

*Assumptions - unrestricted with comparison to recreational*

**Step 1. State the Problem**

Possible risks at this site are liquids from drums migrating to the groundwater, exposure to asbestos if the area is disturbed, and possible radiological contamination via test loops from 1706KE.

- Leaving the drums in place may pose a risk to groundwater.
- Leaving asbestos in place may pose a risk to workers.

05/24/95

**Step 2. Identify the Decision**

The observational approach will be used to remove the material in the dump.

04/17/95

**Step 3. Identify the Inputs to the Decision**

- Groundwater depth and analytical data from downgradient wells
- Further historical information
- Calculation of total fill material covering the construction debris
- 05/24/95 No geophysical survey is required.

**Step 4. Define the Study Boundaries**

The footprint of the removed material from the western end of the gravel pit defines the boundary of the site, and can be determined visually.

05/24/95

**Step 5. Develop the Decision Rule**

Using the observational approach, if the soil below the excavated material exceeds MTCA method B or 15 mrem/yr above background (using an unrestricted scenario) for the contaminants of concern, then excavation will continue.

\*\*\*\*\*

Group 19 400-1 (dump area near 400 Area)

04/19/95

*Assumptions - industrial*

05/31/95

It was agreed that this site is a landlord issue and will be removed from the scope of work in the work plan.

\*\*\*\*\*

Group 20 400 Area Retired Sanitary Pond

04/19/95

*Assumptions - industrial* (This site is within the 400 Area complex, but could be addressed at this time if desired or it could be addressed later with the 400 D&D activities.)

- There is not a problem at this site and it will be removed from 300-FF-2 Work Scope.

\*\*\*\*\*



Group 21 Undocumented Waste Site, 400 Area Septic Tank or Cistern

04/19/95

*Assumptions - industrial*

**Step 1. State the Problem**

There is some question as to the contents and the status of the site. The site may pose a risk if the contents of the tank have not been properly managed. Identify whether this site poses a chemical or radiological risk.

**Step 2. Identify the Decision**

- Does this site pose a chemical or radiological risk?

**Step 3. Identify the Inputs to the Decision**

- Visual inspection 07/07/95 Redline and sampling to determine contents
- Survey with a P-11 probe to determine constituents of tank.

**Step 4. Define the Study Boundaries**

The cistern location and any contaminated surrounding soil defines the boundary.

**Step 5. Develop the Decision Rule**

- If visual inspection finds sludge, then contents will be removed and tested for metals and gross beta.
- 07/07/95 Groundwater protection criteria still pending.
- 07/07/95 If hazardous chemicals leaked at levels above 100 times the MTCA groundwater levels, then revisit the issue to determine the proper course of action.
- If radioactive, then revisit the issue to manage radioactive contents appropriately.

\*\*\*\*\*

Group 22 400 Area Concrete Batch Plant, 400 Area Material Dumping and Building Foundation, 400 Area Construction Material Dumping Area, 400 Area Burn Pit, 07/07/95 Strikeout-400 Area Suspected Burial Ground, 400 Area Waste Dumping Area

04/25/95

*Assumptions - industrial, possibly recreational*

According to the stated criteria for retaining sites in the work plan, it is agreed that these sites are removed from the scope of the work plan.

07/13/95

- 400 Area Concrete Batch Plant - It was agreed that this site defers until D&D activities.

\*\*\*\*\*

Group 23 Undocumented Waste Site, 400 Area Suspected Burial Ground, (pg 4-112) appears to be specifically dumped and buried.

04/25/95

*Assumptions - industrial, possibly recreational*

05/31/95

- It was agreed that a radiation survey be performed in accordance with the requirements of section 222 of the HSRM-1 (Hanford Site Radiological Control Manual) Revision 2 to determine if posting as a surface contamination or soil contamination site (SCA) is required.

**Step 1. State the Problem**

The site may pose a radiological risk to human health and the environment.

**Step 2. Identify the Decision**

Can this site be removed from the scope of work or does the site require remediation?

**Step 3. Identify the Inputs to the Decision**

Perform a radiation survey.

**Step 4. Define the Study Boundaries**

The footprint of the burial ground and the soil directly beneath.

**Step 5. Develop the Decision Rule**

If the radiation levels are below the requirements for designating an SCA, then this site will be deleted from the scope of work in the work plan.

08/16/95

\*\*\*\*\*

**Group 24 300 Area South**

- A new group was added to the 300-FF-2 Operable Unit, the 300 Area South. A discussion of the boundaries for the 300 Area South ensued. An RL action is to determine the current strategy concerning land use for this area.

08/29/95

- It was agreed to leave this area in the operable unit and to declare it an area that requires no further action.

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